



ENDURING RESOURCES

475 Seventeenth Street Suite 1500 Denver Colorado 80202
Telephone: 303 573 1222 Facsimile: 303 573 0461

June 16, 2005

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P. O. Box 145801
Salt Lake City, Utah 84114-5801

Attn.: Ms. Diana Whitney

RE: Archy Bench 11-22-24-2
SESW Sec 2 T11S-R22E
Uintah County, Utah

Dear Ms. Whitney:

Enclosed are two original applications to drill concerning the referenced proposed well. According to Enduring Resources' references, this acreage is managed by the Bureau of Land Management. Therefore, this information was also submitted to them.

Enduring Resources, LLC is requesting the Utah Division of Oil, Gas and Mining to hold this application and all future information as confidential.

If any questions arise or additional information is required, please contact me at 303-350-5114.

Sincerely,

Phyllis Sobotik
Regulatory Specialist

/ps

Enclosures:

RECEIVED
JUN 20 2005
DIV. OF OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING



CONFIDENTIAL FORM 3

AMENDED REPORT ☐
(highlight changes)

APPLICATION FOR PERMIT TO DRILL

1A. TYPE OF WORK: DRILL <input checked="" type="checkbox"/> REENTER <input type="checkbox"/> DEEPEN <input type="checkbox"/>		5. MINERAL LEASE NO: ML-47075	6. SURFACE: Federal
B. TYPE OF WELL: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> OTHER _____ SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		7. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A	
2. NAME OF OPERATOR: Enduring Resources, LLC		8. UNIT or CA AGREEMENT NAME: N/A	
3. ADDRESS OF OPERATOR: 475 17th St, Suite 1500 CITY Denver STATE CO ZIP 80202		PHONE NUMBER: (303) 350-5114	9. WELL NAME and NUMBER: Archy Bench 11-22-24-2
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: 811' FSL 2125' FWL Sec 2 T11S R22E S.L.B.&M. AT PROPOSED PRODUCING ZONE: Same as above		10. FIELD AND POOL, OR WLD CAT: Bitter Creek 11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 2 11S 22E	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 39.6 miles southwesterly from Bonanza, Utah		12. COUNTY: Uintah	13. STATE: UTAH
15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET): 481'	16. NUMBER OF ACRES IN LEASE: 320	17. NUMBER OF ACRES ASSIGNED TO THIS WELL: 40	
18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET): 1173.94'	19. PROPOSED DEPTH: 7,616	20. BOND DESCRIPTION: RLB0008031	
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 5208.0' GR Ungraded	22. APPROXIMATE DATE WORK WILL START: 10/15/2005	23. ESTIMATED DURATION: 20 days	

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT
12-1/4"	8-5/8" J-55 24#	2,000	65/35 Poz 462 sx 1.81 12.6 ppg
			Prem 236 sx 1.18 15.6 ppg
7-7/8"	4-1/2" N-80/I-80 11.6#	7,616	Prem Lite II 364 sx 3.38 11.0 ppg
			50/50 Poz CI G 1192 sx 1.31 14.3 ppg

ATTACHMENTS

VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES:

- | | |
|--|--|
| <input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER | <input checked="" type="checkbox"/> COMPLETE DRILLING PLAN |
| <input checked="" type="checkbox"/> EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER | <input type="checkbox"/> FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER |

NAME (PLEASE PRINT) Phyllis Sobotik

TITLE Regulatory Specialist

SIGNATURE

DATE

(This space for State use only)

API NUMBER ASSIGNED: 43-047-34791

Approved by the
Utah Division of
Oil, Gas and Mining
APPROVAL:

Date: 07-16-05

By: [Signature]

RECEIVED

JUN 20 2005

DIV. OF OIL, GAS & MINING

T11S, R22E, S.L.B.&M.

ENDURING RESOURCES

**T10S
T11S**

1991 Aluminum
Cap C.C.

South (G.L.O.)
S89°52'23"E - 4308.36' (Meas.)

Southwest Corner
Section 35
1991 Aluminum Cap

S89°58'28"W - 2632.31'
(Meas. to the South 1/4
Corner Section 35)
15.09 (G.L.O.)

994.93' / 1923 Brass
Cap C.C.

1637.38'

LOT 4

LOT 3

LOT 2

LOT 1

LOT 5

LOT 6

LOT 7

LOT 8

**WELL LOCATION:
ARCHY BENCH 11-22-24-2**

ELEV. UNGRADED GROUND = 5208.0'

2

1923
Brass Cap

1923
Brass Cap

Drilling
Window

2125'

481'

200'

811'

1923
Brass Cap

1923
Brass Cap

1923
Brass Cap

N89°58'W G.L.O. (Basis of Bearings)
2600.97' (Measured)

N89°56'46"W - 2688.22' (Meas.)

N89°58'W
80.22 (G.L.O.)

◆ = SECTION CORNERS LOCATED

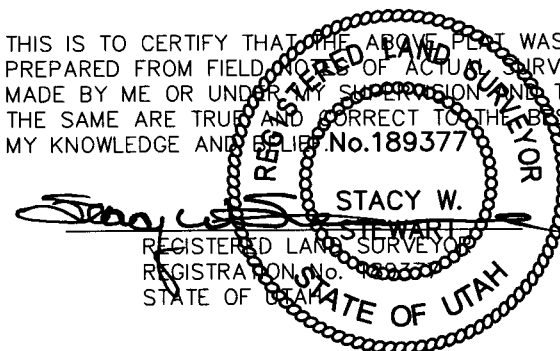
BASIS OF ELEV; U.S.G.S. 7-1/2 min
QUAD (ARCHY BENCH)

ARCHY BENCH 11-22-24-2
(Surface Location) NAD 83
LATITUDE = 39° 53' 04.28"
LONGITUDE = 109° 25' 26.99"

WELL LOCATION, ARCHY BENCH
11-22-24-2, LOCATED AS SHOWN IN
THE SE 1/4 SW 1/4 OF SECTION 2,
T11S, R22E, S.L.B.&M. UTAH COUNTY,
UTAH.



THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS
PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS
MADE BY ME OR UNDER MY SUPERVISION AND THAT
THE SAME ARE TRUE AND CORRECT TO THE BEST OF
MY KNOWLEDGE AND BELIEF. No. 189377



TRI STATE LAND SURVEYING & CONSULTING

180 NORTH VERNAL AVE. - VERNAL, UTAH 84078
(435) 781-2501

DATE DRAWN:
6-1-05

SURVEYED BY: J.H.

REVISED:

DRAWN BY: F.T.M.

NOTES:

SCALE: 1" = 1000'

SHEET

2a

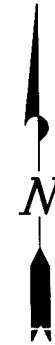
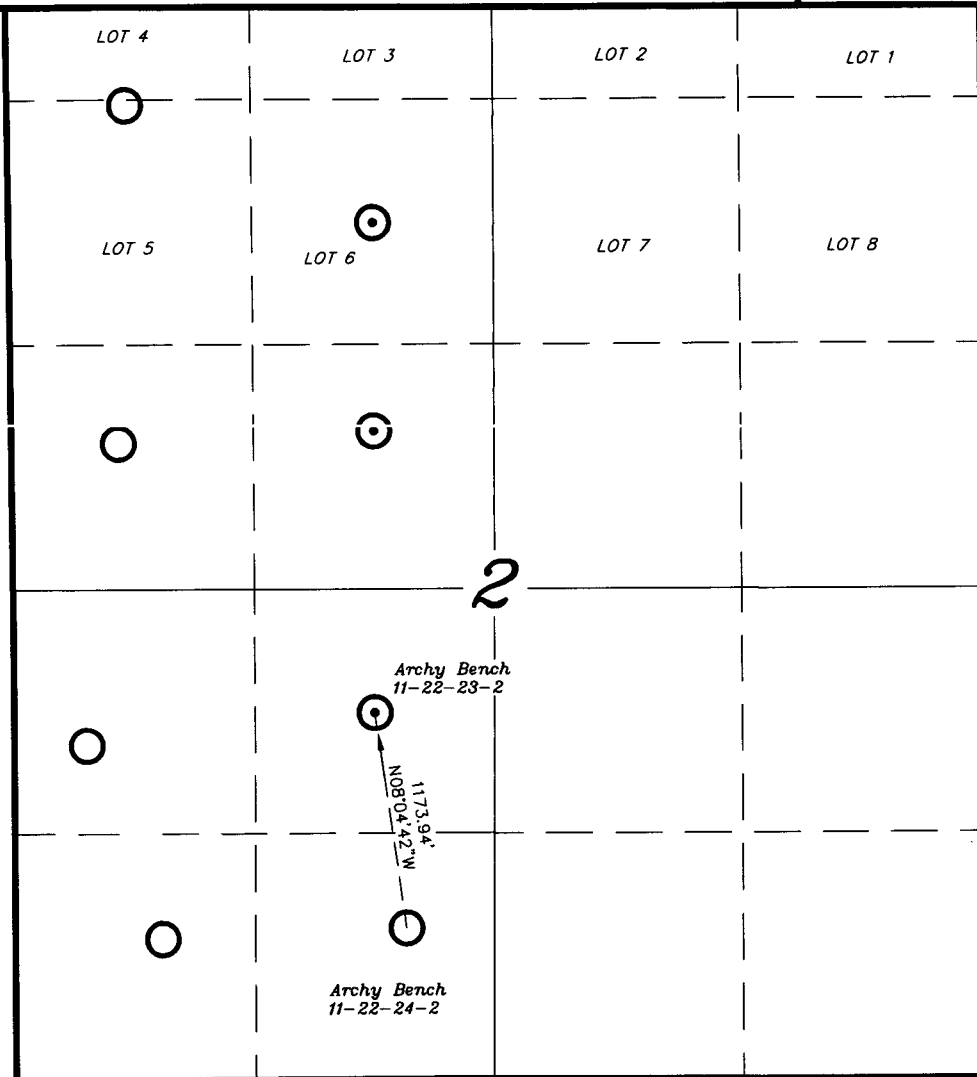
OF 10

T11S, R22E, S.L.B.&M.

ENDURING RESOURCES

SECTION DRILLING MAP
ARCHY BENCH 11-22-24-2
ARCHY BENCH 11-22-23-2

T10S
T11S



LEGEND

- = Vertical Well
 ⊙ = Directional Well Bottom Hole

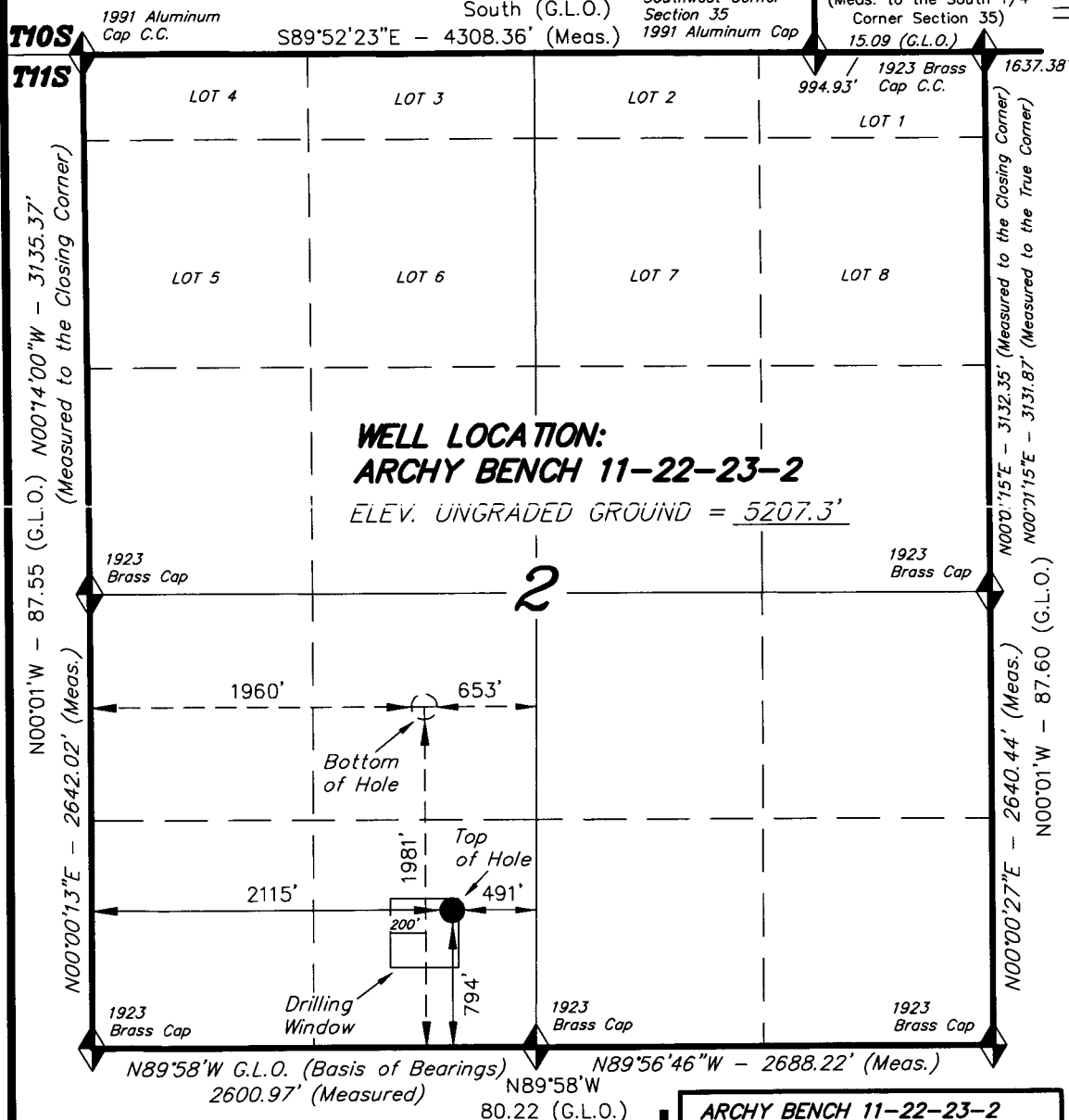
TRI STATE LAND SURVEYING & CONSULTING

180 NORTH VERNAL AVE. - VERNAL, UTAH 84078
 (435) 781-2501

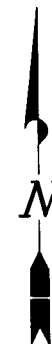
DATE DRAWN: 6-1-05	SURVEYED BY: J.H.	SHEET 1 OF 10
REVISED: 6-9-05	DRAWN BY: F.T.M.	
NOTES:	SCALE: 1" = 1000'	

T11S, R22E, S.L.B.&M.

ENDURING RESOURCES



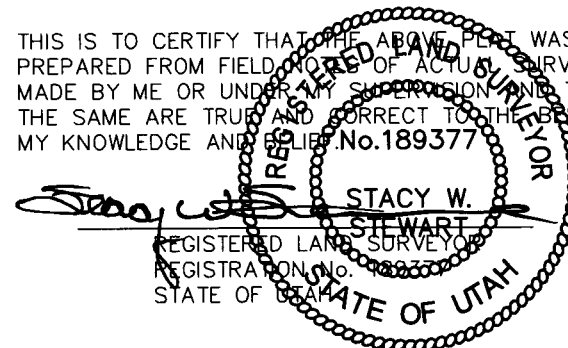
WELL LOCATION, ARCHY BENCH 11-22-23-2, THE TOP HOLE LOCATED AS SHOWN IN THE SE 1/4 SW 1/4, THE BOTTOM HOLE LOCATED AS SHOWN IN THE NE 1/4 SW 1/4 OF SECTION 2, T11S, R22E, S.L.B.&M. UTAH COUNTY, UTAH.



NOTES:

1. The Bottom of hole bears N07°26'12"W 1197.16' from the Top of Hole.

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. No. 189377



TRI STATE LAND SURVEYING & CONSULTING

180 NORTH VERNAL AVE. - VERNAL, UTAH 84078
 (435) 781-2501

DATE DRAWN: 6-1-05	SURVEYED BY: J.H.	SHEET 2b OF 10
REVISED:	DRAWN BY: F.T.M.	
NOTES:	SCALE: 1" = 1000'	

◆ = SECTION CORNERS LOCATED
 BASIS OF ELEV; U.S.G.S. 7-1/2 min
 QUAD (ARCHY BENCH)

**Enduring Resources, LLC
Archy Bench 11-22-24-2
SESW Sec. 2 T11S-R22E
Uintah County, Utah
Lease # ML-47075**

ONSHORE ORDER 1 - DRILLING PLAN

1. Estimated Tops of Geological Markers:

<u>Formation</u>	<u>Depth</u>
Uinta	Surface
Green River	279'
Wasatch	3239'
Mesaverde	5643'

2. Estimated Depths of Anticipated Water, Oil, Gas or Other Minerals: (5216' estimated KB)

Substance	Formation	Depth
	Uinta	Surface
Oil / Gas	Green River	279'
Oil / Gas	Wasatch	3239'
Oil / Gas	Mesaverde	5643'
	Estimated TD	7616'

A 12-1/4" hole will be drilled to approximately 2000 feet. The depth will be determined by the depth that the Birds Nest zone is encountered. The hole will be drilled 400 feet beyond the top of the Birds Nest zone and surface casing will be set.

3. Pressure Control Equipment: (3000 psi schematic attached)

A. Type: Eleven (11) inch double gate hydraulic BOP with eleven (11) inch annular preventer with 3,000 psi Casinghead and 3,000 psi Tubinghead equipped per the attached diagrams for 3,000 psi. BOPE as specified in *Onshore Oil & Gas Order Number 2*. A PVT, Stroke Counter and flow sensor will be installed to check for flow and monitor pit volume.

B. Pressure Rating: 3,000 psi BOPE

C. Kelly will be equipped with upper and lower Kelly valves.

D. Testing Procedure: Annular Preventer:

At a minimum, the annular preventer will be pressure tested to 50% of the stack rated working pressure for a period of ten (10) minutes or until provisions of the test are met, whichever is longer.

At a minimum, the above pressure test will be performed:

1. When the annular preventer is initially installed;
2. Whenever any seal subject to test pressure is broken;
3. Following related repairs; and
4. At thirty (30) day intervals.

In addition to the above, the annular preventer will be functionally operated at least weekly.

Blow-Out Preventer

At a minimum, the BOP, choke manifold, and related equipment will be pressure tested to the approved working pressure of the BOP stack (if isolated from the surface casing by a test plug) or to 70% of the internal yield strength of the surface casing (if the BOP is not isolated from the casing by a test plug). Pressure will be maintained for a period of at least ten (10) minutes or until the requirements of the test are met, whichever is longer.

At a minimum, the above pressure test will be performed:

1. When the BOP is initially installed;
2. Whenever any seal subject to test pressure is broken;
3. Following related repairs; and
4. At thirty (30) day intervals.

In addition to the above, the pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills and tests will be recorded in the IADC driller's log.

D. Miscellaneous Information:

The blowout preventer and related pressure control equipment will be installed, tested and maintained in compliance with the specifications in and requirements of *Onshore Oil & Gas Order Number 2*.

Totco directional surveys will be dropped every 2000 feet. Maximum allowable angle is 5 degrees.

4. Proposed Casing & Cementing Program:**A. Casing Program: All New**

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Depth Set (md)
20"	16"				40'
12-1/4"	8-5/8"	24#	J-55	ST&C	0 – 2,000' est
7-7/8"	4-1/2"	11.6#	N-80/I-80	LT&C	0 – 7616'

The surface casing will have guide shoe, 1 jt., insert float collar. Centralize the first 3 joints with bowspring centralizers. Thread lock guide shoe.

Casing string(s) will be pressure tested to 0.22 psi/foot of casing string length or 1500 psi, whichever is greater (not to exceed 70% of the internal yield strength of the casing), after cementing and prior to drilling out from under the casing shoe.

B. Casing Design Parameters:

Depth (md)	Casing	Collapse(psi)/SF	Burst (psi)/SF	Tension(mlbs)/SF
40	16"			
2000	8-5/8", 24#/ft, J55, STC	1370/1.53(a)	4460/4.98(b)	244/5.08(c)
7616	4-1/2", 11.6#/ft, N-80, LTC	6350/1.61 (d)	7780/2.15 (e)	223/2.94 (f)

- (a.) based on full evacuation with 8.6 ppg fluid on annulus
- (b.) based on 8.6 ppg gradient with no fluid on annulus
- (c.) based on casing string weight in 8.6 ppg mud
- (d.) based on full evacuation with 10.0 ppg fluid on annulus, pipe evacuated

(e.) based on 9.2 ppg gradient, gas to surface, with no fluid on annulus, no gas gradient.

(f.) based on casing string weight in 9.2 ppg mud

PROPOSED CEMENTING PROGRAM

Surface Casing (if well will circulate)-Cemented to surface

CASING	SLURRY	FT. of FILL	CEMENT TYPE	SXS	EXCESS (%)	WEIGHT (ppg)	YIELD (ft ³ /sx)
8-5/8"	Lead	1500	65/35 POZ +6% Gel +10 pps gilsonite + .25 pps Flocele + 3% salt BWOW	462	35%	12.6	1.81
8-5/8"	Tail	500	Premium cmt +2% CaCl +.25 pps flocele	236	35%	15.6	1.18

A cement top job is required if cement fallback is greater than 10' below ground level. Top job cement will be premium cement w/2% CaCl. Volume as required.

Surface Casing (if well will not circulate)-Cemented to surface

CASING	SLURRY	FT. of FILL	CEMENT TYPE	SXS	EXCESS (%)	WEIGHT (ppg)	YIELD (ft ³ /sx)
8-5/8"	Lead	500	Premium cmt + 2% CaCl +.25 pps flocele	280	60	15.6	1.18
8-5/8"	Top job	As req.	Premium cement + 2% CaCl	Req.		15.6	1.18

Production Casing and Liner-Cemented TD to Surface

CASING	SLURRY	FT. of FILL	CEMENT TYPE	SXS	EXCESS (%)	WEIGHT (ppg)	YIELD (ft ³ /sx)
4-1/2"	Lead	3240	Premium Lite II +3% KCL +0.25 pps celloflake +5 pps gilsonite +10% gel +0.5% extender	364	60	11.0	3.38
4-1/2"	Tail	4400	50/50 POZ Class G +10% salt + 2% gel + 1% R-3	1192	60	14.3	1.31

Cement volumes for the 4-1/2" Production Casing will be calculated to provide a top of cement to surface. Cement volumes are approximate and were calculated under the assumption that a gauge hole will be achieved. Actual cement volumes may vary due to variations in the actual hole size and will be determined by running a caliper log on the drilled hole.

All waiting on cement (WOC) times will be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling cut.

5. Drilling Fluids (mud) Program:

Interval	Mud Weight	Fluid Loss	Viscosity	Mud Type
0' - 2000'		No cntrl		Air/mist
2000' - 3000'	8.4-8.6	No cntrl	28-36	Water
3000' - 7616'	8.8-10.2	8 - 10 ml	32-42	Water/Gel

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blowout will be available at the well site during drilling operations.

6. Evaluation Program:

Tests: No tests are currently planned.

Coring: No cores are currently planned.

Samples: None

<u>Logging:</u> Dual Induction – SFL /Gamma Ray Caliper:	TD to Base Surface Casing
Compensated Neutron/Litho Density Temperature/Gamma Ray:	TD to Base Surface Casing
Cement Bond Log / Gamma Ray:	PBTD to Top of Cement

Stimulation: A stimulation or frac treatment will be designed for completion of this well based on openhole log analysis. The drill site, as approved, will be sufficient size to accommodate all completion activities.

7. Abnormal Conditions:

No abnormal temperatures or pressures are anticipated. No H₂S has been encountered or known to exist from previous wells drilled to similar depths in the general area.

Maximum anticipated bottom hole pressure equals approximately 3960 psi (calculated at 0.52 max psi/foot of hole) and maximum anticipated surface pressure equals approximately 2285 psi (anticipated bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot of hole).

8. Anticipated Starting Dates:

Anticipated Commencement Date-	October 15, 2005
Drilling Days-	Approximately 10 days
Completion Days -	Approximately 10 days
Anticipate location construction within 30 days of permit issue.	

9. Variances:

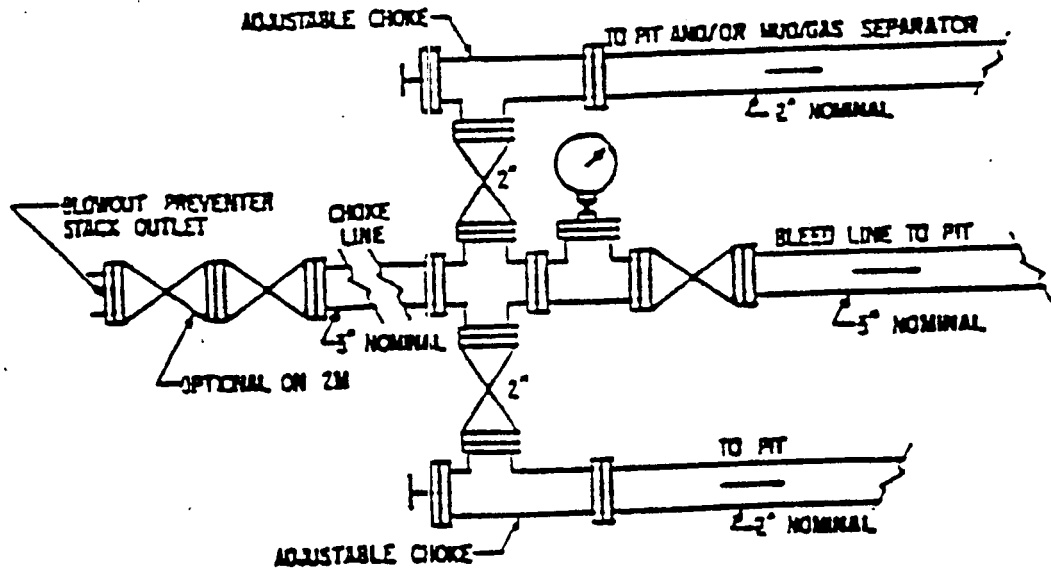
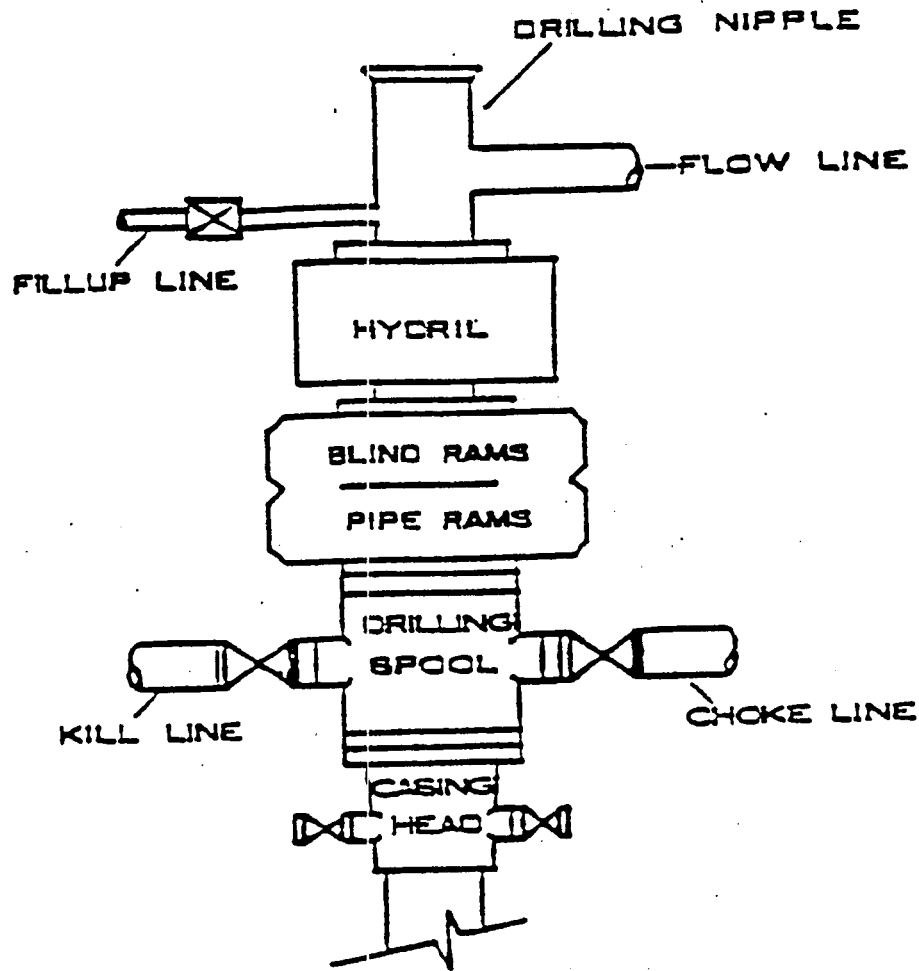
None anticipated

10. Other:

A Cultural Resource Inventory and Paleontology reconnaissance shall be conducted for the well location, access route and pipeline. The reports shall be submitted to the Division of Oil, Gas and Mining upon their receipt.

3,000 PSI

EOP STACK



**Enduring Resources, LLC
Archy Bench 11-22-24-2
SESW Sec. 2 T11S-R22E
Uintah County, Utah
Lease # ML-47075**

MULTI-POINT SURFACE USE & OPERATIONS PLAN

1. Existing Roads:

Directions to the proposed location are as follows:

Beginning at the city of Bonanza, Utah, proceed south on State Hwy 45 for approximately 5.7 miles to where there is a turn off to the right. Turn right, exiting State Hwy 45, and proceed southwest on Southam Canyon Road (Class B County Road 4170) for a distance of approximately 5.1 miles. Continue along County Road 4170 going west then northwesterly for approximately 3.7 miles. Proceed along the same road going southwest then westerly for approximately 3.2 miles to where the road forks. Turn left and continue southerly along Asphalt Wash (Class B County Road 4160) for 3.0 miles to where the road forks near a landing strip. Stay to the right and continue south along Asphalt Wash road for approximately 6.5 miles to where there is a turn-off to the right. Turn right onto Bitter Creek Road (Class B County Road 4120) and continue in a westerly direction for approximately 1.9 miles to where there is a turn off to the left. Turn left and continue in a westerly direction for approximately 5.4 miles to an intersection with Buck Camp Canyon Road (Class B County Road 4220). Turn right and continue on Bitter Creek Road traveling in a northerly direction for approximately 4.8 miles to the second turn-off and turn right. Continue traveling east for approximately 1,780 feet (0.3 miles) to the proposed Archy Bench #11-22-24-2 well location. This location shall be the well pad for the proposed Archy Bench #11-22-24-2 and the proposed Archy Bench #11-22-23-2 well.

The proposed well site is located approximately 39.6 miles Southwesterly from Bonanza, Utah. Refer to attached Topographic Map "A" and "B"

All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.

2. Planned Access Roads:

The 1,250 feet (0.2 miles) of the proposed access road is an existing road (Bitter Creek Road-Class B County Road 4120) requiring no new construction or upgrades. Approximately 1,780 feet (0.3 miles) of new constructed access road is proposed to enter the location from the existing access road. This location and access road shall be for both the Archy Bench #11-22-24-2 and the Archy Bench #11-22-23-2 wells. Please refer to Topo Map "B".

The access road will be crowned 2% to 3%, ditched and constructed with a running surface of 18 feet and a maximum disturbed width of 30 feet right-of-way. Maximum grade of road is 5% or less. Graveling or capping the roadbed will be performed as necessary to provide a well constructed, safe road. No fence crossings, culverts, turnouts, cattleguards or major cuts and fills are required. Prior to construction or upgrading, the proposed road shall be cleared of any snow and allowed to dry completely.

Surface disturbance and vehicular traffic will be limited to the proposed location and proposed access route. Any additional area needed will be approved in advance. All construction shall be in conformance with the standards outlined in the BLM and Forest Service publication: Surface Operating Standards for Oil and Gas Exploration and Development. 1989.

The road surface and shoulders will be kept in a safe usable condition and will be maintained in accordance with the original construction standards. All drainage ditches will be kept clear and free flowing and will be

maintained according to original construction standards. The access road surface will be kept free of trash during operations. All traffic will be confined to the approved disturbed surface. Road drainage crossings shall be designed so they will not cause siltation or accumulation of debris in the drainage crossing nor shall the drainages be blocked by the road bed. Erosion of drainage ditches by runoff water shall be prevented by diverting water off at frequent intervals by means of cutouts. Upgrading shall not be allowed during muddy conditions. Should mud holes develop, they shall be filled in and detours around them avoided. When snow is removed from the road during the winter months, the snow shall be pushed outside of the borrow ditches and the turnouts kept clear so that snowmelt will be channeled away from the road.

3. **Location of Existing Wells Within a One Mile Radius:** Please refer to Topographic Map "C"

There are no known water wells, temporarily abandoned wells, plugged and abandoned wells, disposal wells, monitoring or observation wells, or injection wells located within a one (1) mile radius of the proposed location.

There is one known producing well – Archy Bench State #1-2 NENE Sec 2 T11S-R22E

There are two known shut in wells - NBU #70-34B NESW Sec 34 T10S-R22E
- Bitter Creek #1-3 SWNE Sec 3 T11S-R22E

There may be drilling activity or permitted wells within in the area.

4. **Location of Existing &/or Proposed Facilities:**

All production facilities will be located on the disturbed portion of the well pad and at a minimum of 25 feet from the toe of the back slope or the top of the fill slope.

A dike will be constructed completely around those production facilities which contain fluids (i.e. production tanks, produced water tanks and/or heater treater.) These dikes will be constructed of compacted subsoil, be impervious, hold 100% of the capacity of the largest tank and be independent of the back cut.

All permanent (on site for six months or longer) above the ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth tone color to match one of the standard environmental colors, as determined by the Rocky Mountain Five State Inter-Agency Committee.

All facilities will be painted within 6 months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The requested color is Carlsbad Canyon (2.5Y 6/2).

Any necessary pits will be properly fenced to protect livestock and prevent wildlife entry.

An off lease Right-of-Way is being requested from the Bureau of Land Management for approximately 1,500 feet (0.3 miles) of proposed gas gathering line. The width of the right-of-way requested is 15 feet. A permanent right-of-way is requested for a term of 30 years.

If the well is capable of economic production, a surface gas gathering line and related equipment shall be installed. The gas gathering line shall be in use year round. Approximately 1,500 feet (0.3 miles) of 6 inch or less diameter steel, unpainted, welded gas gathering line is proposed to be laid to service both the Archy Bench #11-22-24-2 and the Archy Bench #11-22-23-2 wells. The proposed line shall begin at the well site and continue in a westerly direction being laid alongside the access road to the proposed Archy Bench #11-22-24-2 location which shall serve as a common delivery point. The gathering line at the common delivery point shall tie into an existing pipeline located in the southerly portion of Sec 2 T11S-R22E. The proposed gathering line shall be placed above ground adjacent to the access route. The line will be welded together and pulled from the well site location and tie-in point when practical; however, it may be necessary to utilize the access road for welding of the line. The line will then be boomed off to the side of the road. The gas meter

run will be located within 500' of the wellhead. The meter run will be housed. The gas gathering line will be buried or anchored down from the wellhead to the meter. Please refer to the attached Topographic Map "D".

Upon plugging and abandonment of both the Archy Bench #11-22-24-2 and the Archy Bench # 11-22-23-2 wells, the gas gathering line will be removed and the disturbed area will be re-contoured and restored as near as practical to the original condition. If necessary, re-seeding operations will be performed after completion of other reclamation operations. The appropriate surface management agency will be contacted for the required seed mixture and seeding dates.

5. Location and Type of Water Supply:

Water will be obtained from the White River by Tu and Frum, Inc. Water User Claim #49-2185, Application #T75517, or by Target Trucking Water User Claim #43-2195, or by Dalbo Inc. Water User Claim #43-8496.

Water will be hauled to the location over the roads marked on Topographic Maps "A" and "B".

No water well is to be drilled on this lease.

6. Source of Construction Materials:

Surface and subsoil materials in the immediate area will be utilized for location and access road construction.

Any gravel will be obtained from a commercial source; however, gravel sized rock debris associated with location and access road construction may be used as access road surfacing material.

7. Methods of Handling Waste Materials:

Drill cuttings will be contained and buried in the reserve pit.

Drilling fluids, including salts and chemicals, will be contained in the reserve pit. Upon termination of drilling and completion operations of both the Archy Bench #11-22-24-2 and the Archy Bench #11-22-23-2 wells, the liquid contents of the reserve pit will be removed and disposed of at an approved waste disposal facility within 120 days after drilling of both wells is terminated.

The reserve pit will be constructed on the location and will not be located within natural drainage, where a flood hazard exists or surface runoff will destroy or damage the pit walls. The reserve pit will be constructed so that it will not leak, break or allow discharge of liquids.

A plastic reinforced liner is to be used. It will be a minimum of 12 mil thick and felt with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit.

Any spills of oil, salt water or other noxious fluids will be immediately cleaned up and removed to an approved disposal site.

A chemical portable toilet will be furnished with the drilling rig. The toilet will be replaced periodically utilizing a licensed contractor to transport by truck the portable chemical toilet so that its contents can be delivered to the Vernal Wastewater Treatment Facility in accordance with state and county regulations.

Garbage, trash and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. No trash will be burned on location.

All debris and other waste material not contained in the trash cage will be cleaned up and removed from the location immediately after removal of the drilling rig.

Any open pits will be fenced during the operations. The fencing will be maintained until such time as the pits are backfilled.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds will be used, produced, stored, transported or disposed of annually in association with the drilling, completion or testing of this well. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported or disposed of in association with the drilling, completion or testing of this well.

Produced oil will be stored in an oil tank and then hauled by truck to a crude purchaser facility. Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to an approved disposal site.

8. Ancillary Facilities:

During drilling operations, approximately 20 days, the site will be a manned camp. Three or four additional trailers will be on location to serve as the crew's housing and eating facility. These will be located on the perimeter of the pad site within the topsoil stockpiles. Refer to Sheet 6.

9. Well Site Layout: (Refer to Sheet #3, #4, #5 & #6)

The attached Location Layout Diagrams describes drill pad cross-sections, cuts and fills and locations of the mud tanks, reserve pit, flare pit, pipe racks, trailer parking, spoil dirt stockpile(s) and surface material stockpiles(s).

Please see the attached diagram for rig orientation and access roads.

The proposed Archy Bench #11-22-23-2 well is to be a directional well drilled from the proposed Archy Bench #11-22-24-2 well location. Please refer to Sheet 3.

All pits shall be fenced to the following minimum standards:

39 inch net wire shall be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if pipe or some type of reinforcement rod is attached to the top of the entire fence.

The net wire shall be no more than 2 inches above the ground. The barbed wire shall be 3 inches over the net wire. Total height of the fence shall be at least 42 inches.

Corner posts shall be cemented and/or braced in such a manner to keep the fence tight at all times.

Standard steel, wood or pipe posts shall be used between the corner braces. Maximum distance between any two fence posts shall be no greater than 16 feet.

All wire shall be stretched by, using a stretching device, before it is attached to corner posts.

The reserve pit fencing will be on three sides during drilling operations and on the fourth side when the rig moves off location. Pits will be fenced and maintained until cleanup.

Location size may change prior to drilling the well due to the current rig availability. If the proposed location is not large enough to accommodate the drilling rig, the location will be re-surveyed and a Form 9 will be submitted.

10. Plans for Surface Reclamation:**Producing Location:**

Immediately upon well completion of both the Archy Bench #11-22-24-2 and the Archy Bench #11-22-23-2 wells, the location and surrounding area will be cleared of all unused tubing, equipment, materials, trash and debris not required for production.

Immediately upon well completion, any hydrocarbons in the pit shall be removed in accordance with 40 CFR 3162.7.

Before any dirt work associated with location restoration takes place, the reserve pit shall be as dry as possible. All debris in it will be removed. Other waste and spoil materials will be disposed of immediately upon completion of operations for both the Archy Bench #11-22-24-2 and the Archy Bench #11-22-23-2 wells.

The reserve pit and that portion of the location not needed for production facilities/operations for both the Archy Bench #11-22-24-2 and the Archy Bench #11-22-23-2 wells will be re-contoured to the approximate natural contours. The reserve pit will be reclaimed within 90 days from the date of the last well completion, weather permitting.

To prevent surface water(s) from standing (ponding) on the reclaimed reserve pit area, final reclamation of the reserve pit will consist of "mounding" the surface 3 feet above surrounding ground surface to allow the reclaimed pit area to drain effectively.

Upon completion of backfilling, leveling and re-contouring, the stockpiled topsoil will be spread evenly over the reclaimed area(s).

The Operator will control noxious weeds along Rights-Of-Way for roads, pipelines, well sites or other applicable facilities.

Dry Hole / Abandoned Location:

Abandoned well sites, roads and other disturbed areas will be restored as near as practical to their original condition. Where applicable, these conditions include the re-establishment of irrigation systems, the re-establishment of appropriate soil conditions and re-establishment of vegetation as specified.

All disturbed surfaces will be re-contoured to the approximate natural contours with reclamation of the well pad and access road to be performed as soon as practical after final abandonment of both the Archy Bench #11-22-24-2 and the Archy Bench #11-22-23-2 wells. If necessary, re-seeding operations will be performed after completion of other reclamation operations.

Seed Mixture:

The appropriate surface management agency will be contacted for the required seed mixture and seeding dates.

11. Surface Ownership: Location, Access Road & Pipeline

Bureau of Land Management
Division of Mineral Resources
170 South 500 East
Vernal, Utah 84078
Office – 435-781-4400; Fax – 435-781-4410

12. Other Information:

Wildlife Stipulations: Wildlife stipulations and possible activity restrictions will be detailed in the "Conditions of Approval" received with an approved Permit to Drill. Operator will comply with these wildlife stipulations.

Archeology: A Cultural Resource Inventory shall be conducted for the well location, access route and pipeline. The report shall be submitted to the Division of Oil, Gas and Mining and the Bureau of Land Management upon its receipt.

Paleontology: A Paleontology reconnaissance shall be conducted for the well location, access route and pipeline. The report shall be submitted to the Division of Oil, Gas and Mining and the Bureau of Land Management upon its receipt.

If, during operations, any archaeological or historical sites, or any objects of antiquity (subject to the Antiquities Act of June 8, 1906) are discovered, all operations which would affect such sites will be suspended and the discovery reported promptly to the surface management agency.

All lease operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, the approved Plan of Operations and any applicable Notice to Lessees. The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Enduring Resources, LLC
Archy Bench 11-22-24-2
SESW Sec. 2 T11S-R22E
Uintah County, Utah
Lease # ML-47075

Directions to Proposed Location

Directions to the proposed location are as follows:

Beginning at the city of Bonanza, Utah, proceed south on State Hwy 45 for approximately 5.7 miles to where there is a turn off to the right. Turn right, exiting State Hwy 45, and proceed southwest on Southam Canyon Road (Class B County Road 4170) for a distance of approximately 5.1 miles. Continue along County Road 4170 going west then northwesterly for approximately 3.7 miles. Proceed along the same road going southwest then westerly for approximately 3.2 miles to where the road forks. Turn left and continue southerly along Asphalt Wash (Class B County Road 4160) for 3.0 miles to where the road forks near a landing strip. Stay to the right and continue south along Asphalt Wash road for approximately 6.5 miles to where there is a turn-off to the right. Turn right onto Bitter Creek Road (Class B County Road 4120) and continue in a westerly direction for approximately 1.9 miles to where then is a turn off to the left. Turn left and continue in a westerly direction for approximately 5.4 miles to an intersection with Buck Camp Canyon Road (Class B County Road 4220). Turn right and continue on Bitter Creek Road traveling in a northerly direction for approximately 4.8 miles to the second turn-off and turn right. Continue traveling east for approximately 1,780 feet (0.3 miles) to the proposed Archy Bench #11-22-24-2 well location. This location shall be the well pad for the proposed Archy Bench #11-22-24-2 and the proposed Archy Bench #11-22-23-2 well.

The proposed well site is located approximately 39.6 miles Southwesterly from Bonanza, Utah.



CENTER STAKE


ENDURING RESOURCES
A.B. 11-22-24-2

Date Photographed: 05/20/2005
Date Drawn: 05/23/2005
Drawn By: bgm


Tri-State
Land Surveying Inc.
(435) 781-2501
180 North Vernal Ave. Vernal, Utah 84078



NORTH


ENDURING RESOURCES
A.B. 11-22-24-2

Date Photographed: 05/20/2005

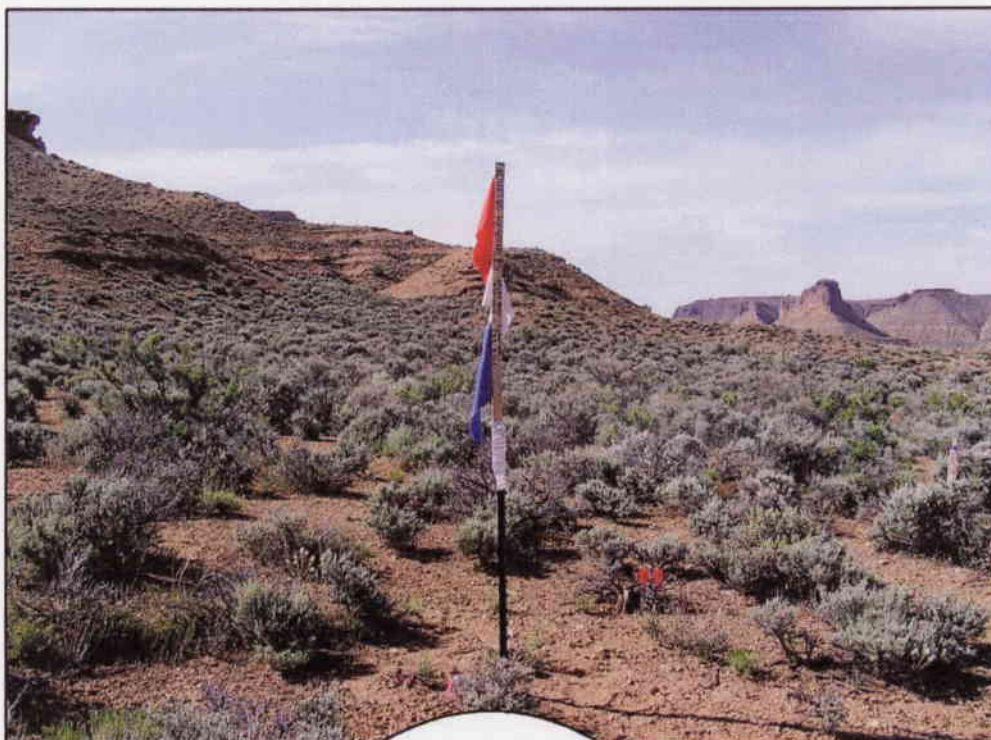
Date Drawn: 05/23/2005

Drawn By: bgm


Tri-State
Land Surveying Inc.
 (435) 781-2501
 180 North Vernal Ave. Vernal, Utah 84078

EAST





SOUTH


ENDURING RESOURCES

A.B. 11-22-24-2

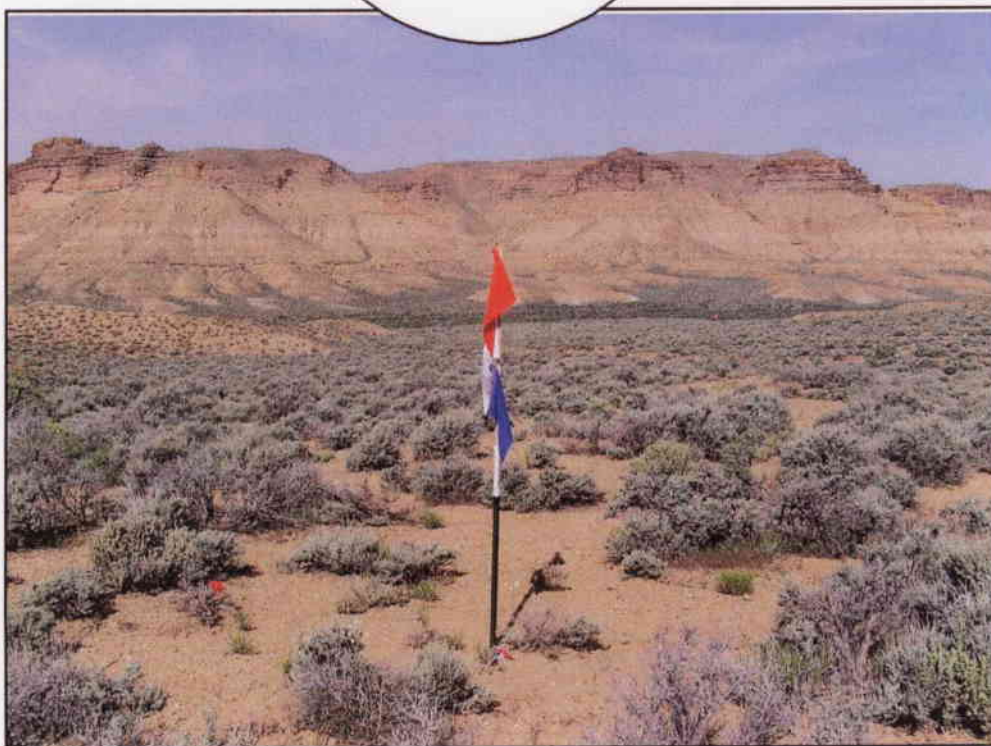
Date Photographed: 05/20/2005

Date Drawn: 05/23/2005

Drawn By: bgm


**Tri-State
Land Surveying Inc.**
(435) 781-2501
180 North Vernal Ave. Vernal, Utah 84078

WEST



ENDURING RESOURCES

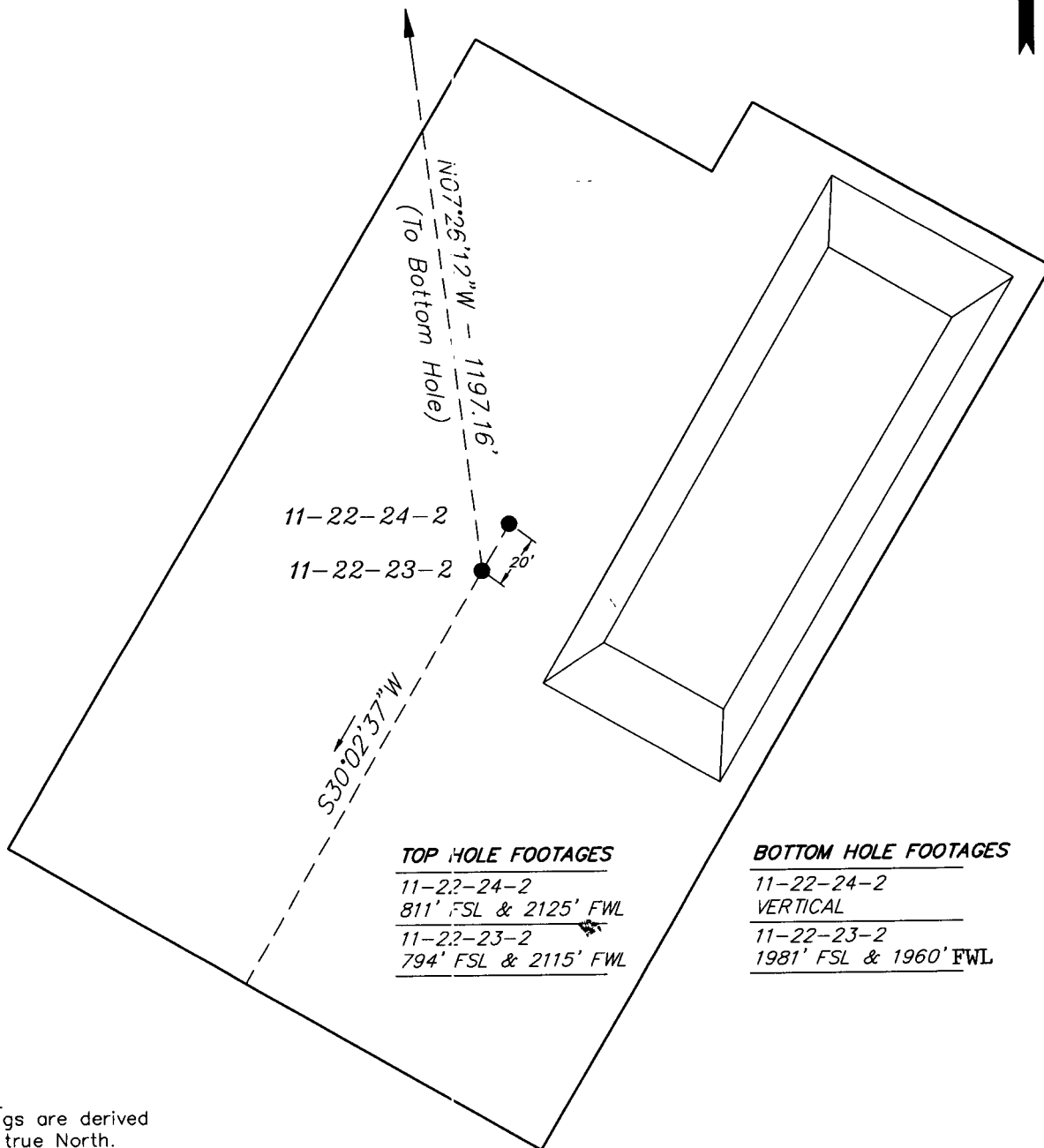
WELL PAD INTERFERENCE PLAT

ARCHY BENCH 11-22-24-2

ARCHY BENCH 11-22-23-2

Section 2, T11S, R22E, S.L.B.&M.

N



TOP HOLE FOOTAGES

11-22-24-2
811' FSL & 2125' FWL
11-22-23-2
794' FSL & 2115' FWL

BOTTOM HOLE FOOTAGES

11-22-24-2
VERTICAL
11-22-23-2
1981' FSL & 1960' FWL

Note:

Bearings are derived using true North.

RELATIVE COORDINATES From top hole to bottom hole

WELL	NORTH	EAST
24-2	N/A	N/A
23-2	1187	-155

LATITUDE & LONGITUDE Surface position of Wells (NAD 83)

WELL	LATITUDE	LONGITUDE
24-2	39° 53' 04.28"	109° 25' 26.99"
23-2	39° 53' 04.11"	109° 25' 27.12"

SURVEYED BY: J.H. DATE DRAWN: 6-1-05

DRAWN BY: F.T.M. SCALE: 1" = 60'

NOTES:

Tri State
Land Surveying, Inc.

180 NORTH VERNAL AVE. VERNAL, UTAH 84078

(435) 781-2501

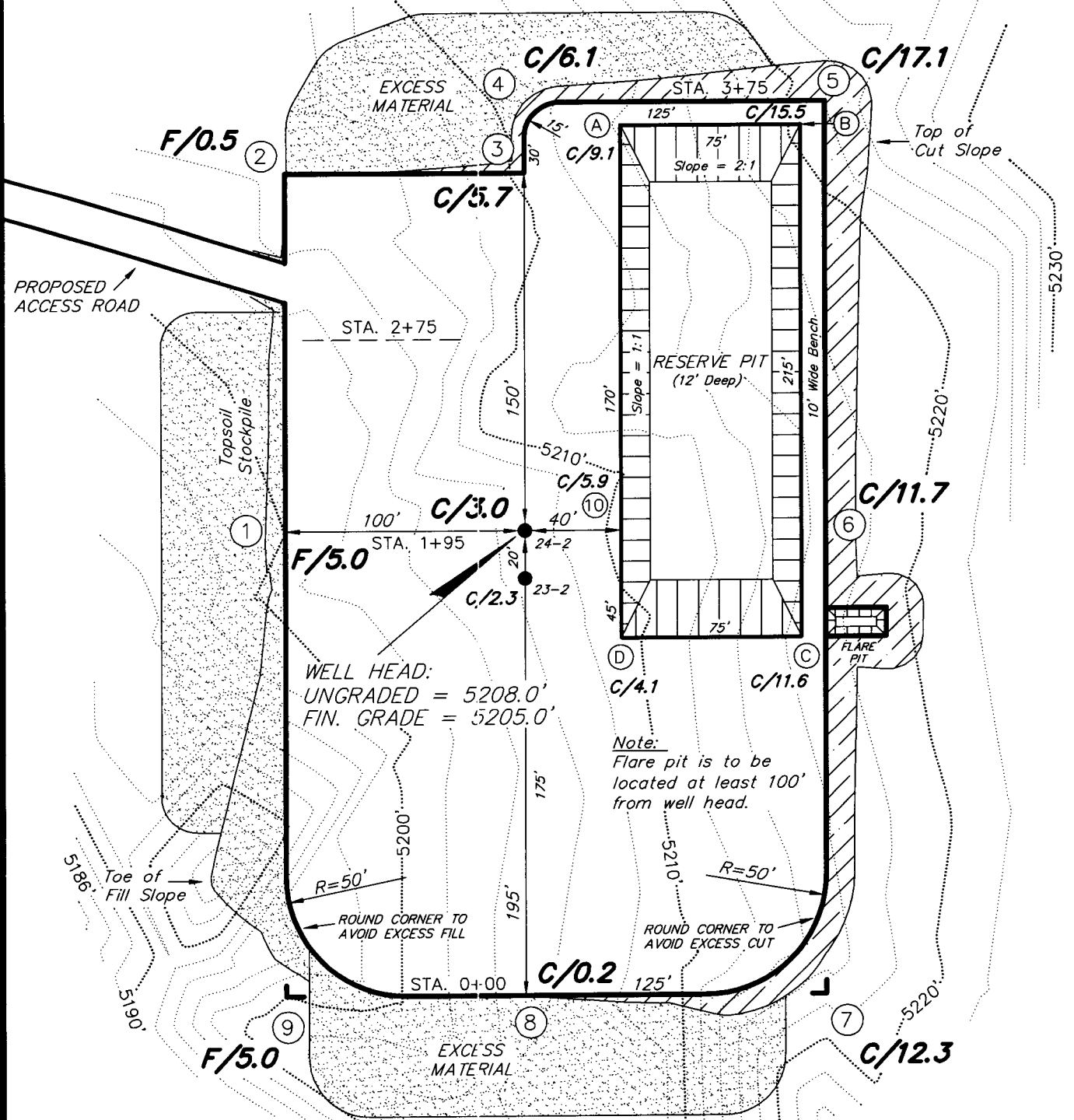
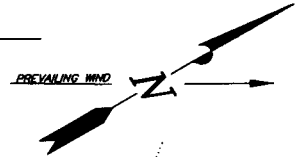
SHEET

3

OF 10

ENDURING RESOURCES

ARCHY BENCH 11-22-24-2
ARCHY BENCH 11-22-23-2
Section 2, T11S, R22E, S.L.B.&M.



REFERENCE POINTS

230' NORTHWESTERLY = 5212.6'
280' NORTHWESTERLY = 5214.8'

SURVEYED BY: J.H. DATE DRAWN: 6-1-05
DRAWN BY: F.T.M. SCALE: 1" = 60'
NOTES:

Tri State
Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
(435) 781-2501

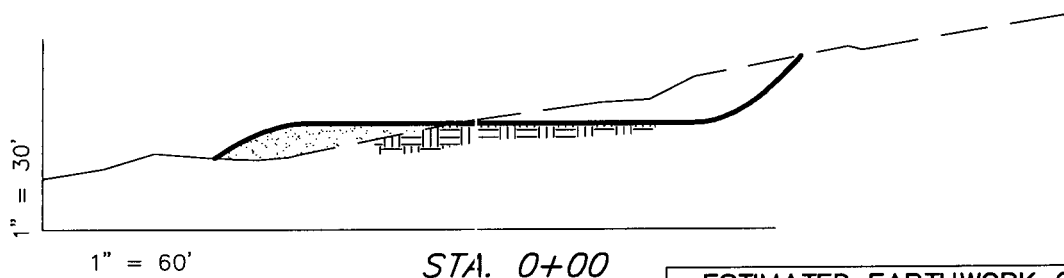
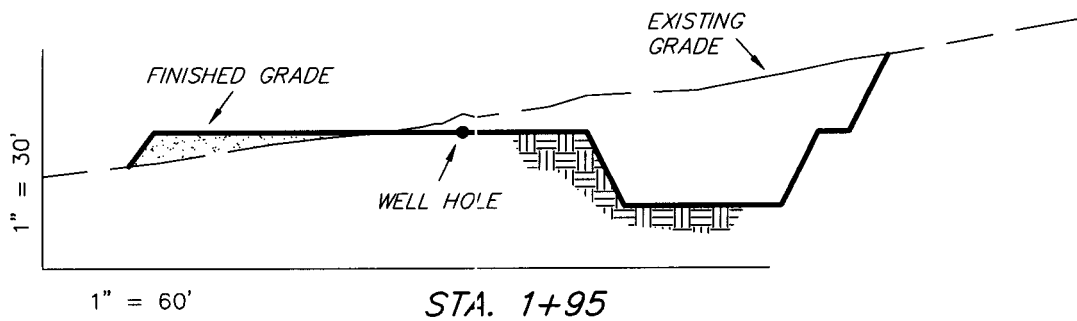
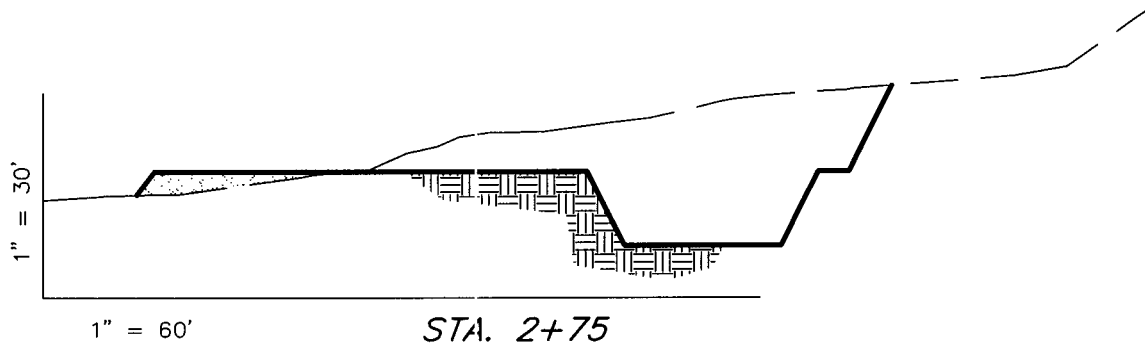
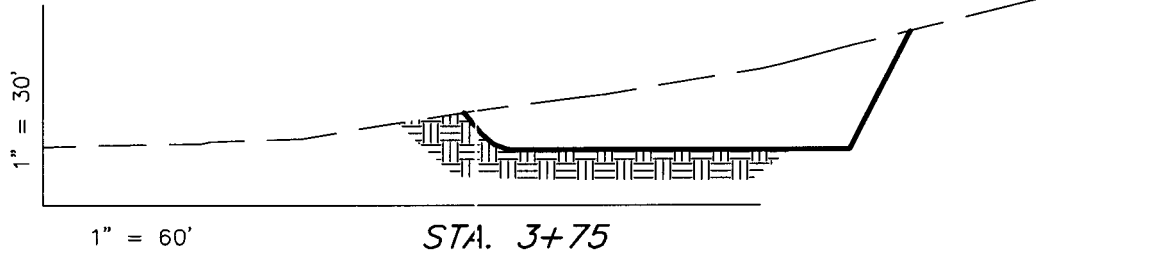
SHEET
4
OF 10

ENDURING RESOURCES

CROSS SECTIONS

ARCHY BENCH 11-22-24-2

ARCHY BENCH 11-22-23-2



NOTE:
UNLESS OTHERWISE NOTED
CUT SLOPES ARE AT 1:1
FILL SLOPES ARE AT 1.5:1

ESTIMATED EARTHWORK QUANTITIES (No Shrink or swell adjustments have been used) (Expressed in Cubic Yards)				
ITEM	CUT	FILL	6" TOPSOIL	EXCESS
PAD	13,650	4,700	Topsoil is not included in Pad Cut	8,950
PIT	5,390	0		5,390
TOTALS	19,040	4,700	1,720	14,340

SURVEYED BY: J.H. DATE DRAWN: 6-1-05

DRAWN BY: F.T.M. SCALE: 1" = 60'

NOTES:

Tri State
Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
(435) 781-2501

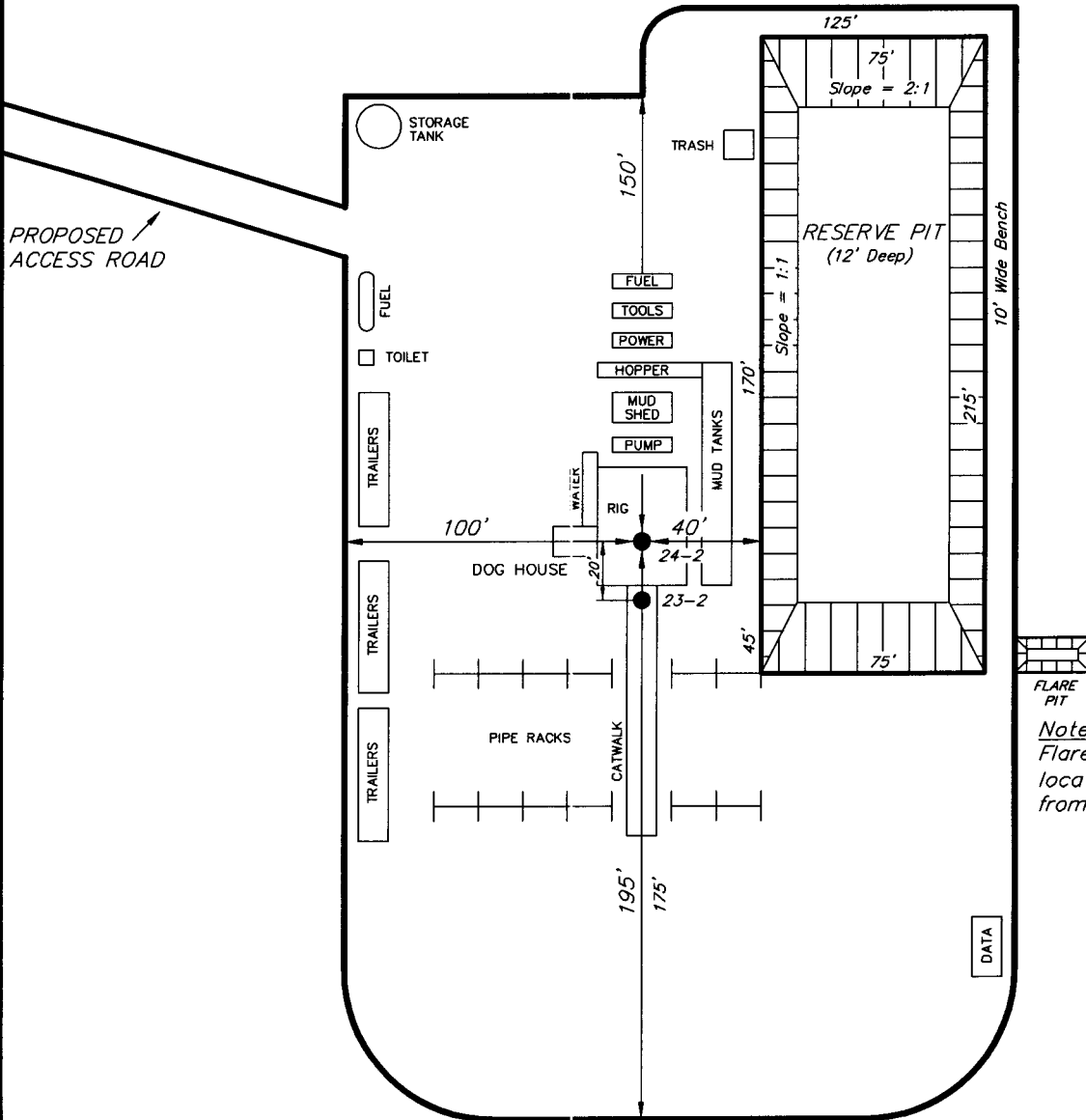
SHEET
5
OF 10

ENDURING RESOURCES

TYPICAL RIG LAYOUT

ARCHY BENCH 11-22-24-2

ARCHY BENCH 11-22-23-2

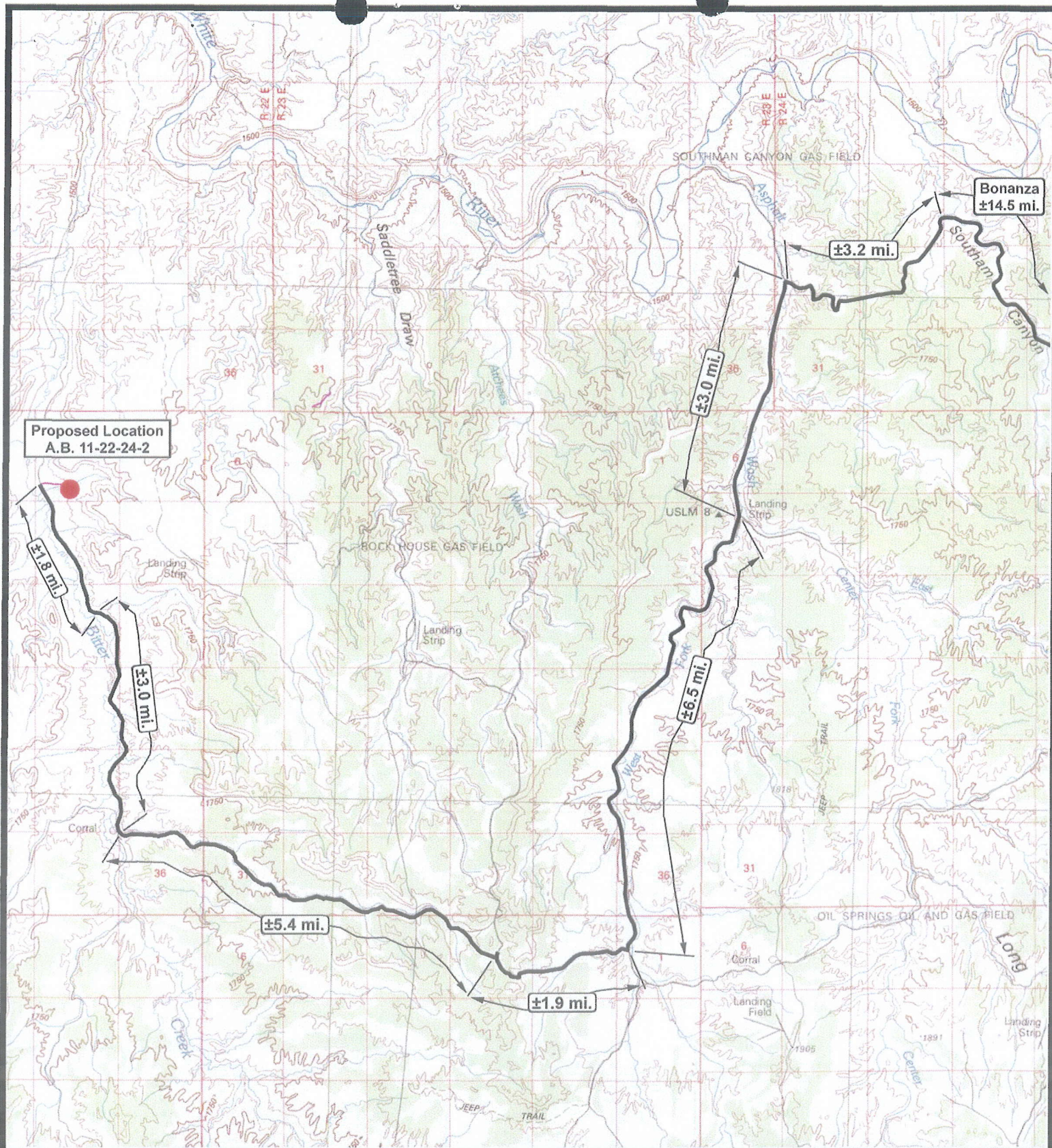


Note:
Flare pit is to be located at least 100' from well head.

SURVEYED BY: J.H. DATE DRAWN: 6-1-05
DRAWN BY: F.T.M. SCALE: 1" = 60'
NOTES:

Tri State
Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
(435) 781-2501

SHEET
6
OF 10



ENDURING RESOURCES

Archy Bench 11-22-24-2
Sec. 2, T11S, R22E, S.L.B.&M.



Tri-State
Land Surveying Inc.
 (435) 781-2501
 180 North Vernal Ave. Vernal, Utah 84078

SCALE: 1" = 100,000'
 DRAWN BY: bgm
 DATE: 06-01-2005

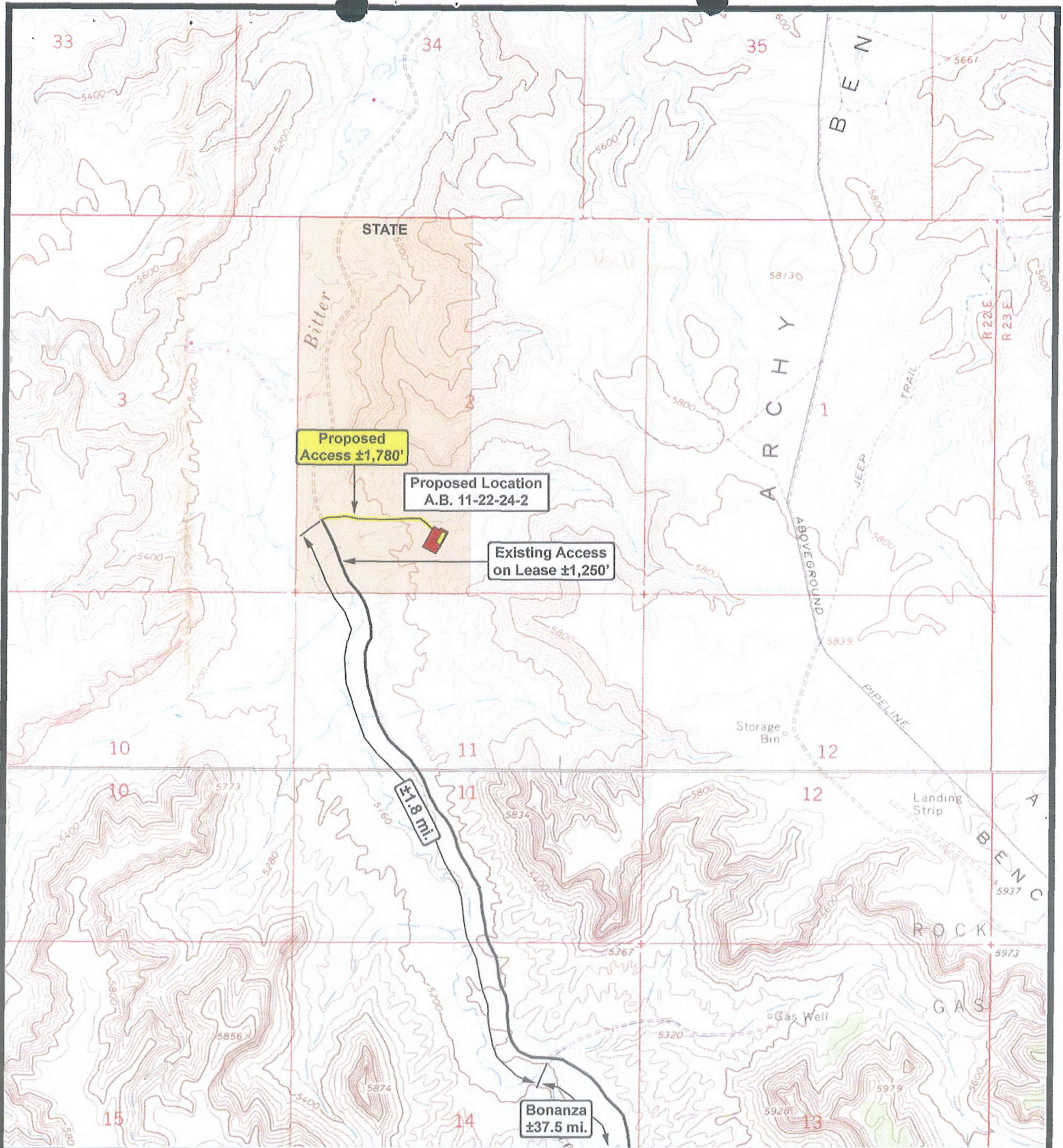
Legend

- Existing Road
- Proposed Access

TOPOGRAPHIC MAP

"A"

SHEET
7
 OF 10



ENDURING RESOURCES

Archy Bench 11-22-24-2
Sec. 2, T11S, R22E, S.L.B.&M.



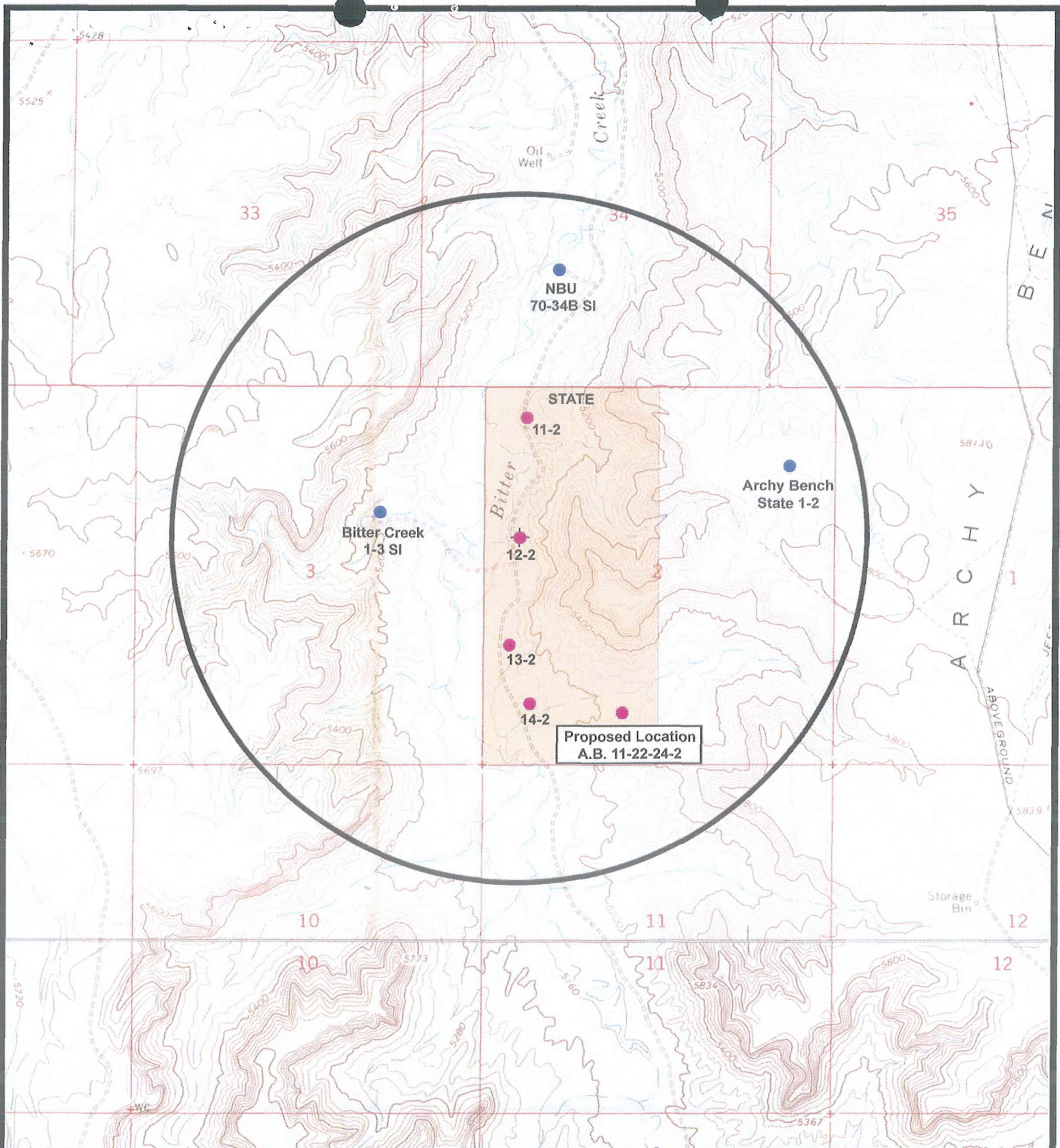
Tri-State
Land Surveying Inc.
 (435) 781-2501
 180 North Vernal Ave. Vernal, Utah 84078

SCALE: 1" = 2,000'
 DRAWN BY: bgm
 DATE: 06-01-2005

Legend
 Existing Road
 Proposed Access

TOPOGRAPHIC MAP
"B"

SHEET
8
 OF 10



ENDURING RESOURCES

Archy Bench 11-22-24-2
Sec. 2, T11S, R22E, S.L.B.&M.



Tri-State
Land Surveying Inc.
 (435) 781-2501
 180 North Vernal Ave. Vernal, Utah 84078

SCALE: 1" = 2,000'

DRAWN BY: bgm

DATE: 06-01-2005

Legend

- Proposed Location
- Existing Location
- One-Mile Radius

TOPOGRAPHIC MAP

"C"

SHEET

9

OF 10

10
OF 10

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 06/20/2005

API NO. ASSIGNED: 43-047-36791

WELL NAME: ARCHY BENCH 11-22-24-2

OPERATOR: ENDURING RESOURCES, LLC (N2750)

CONTACT: PHYLLIS SOBOTIK

PHONE NUMBER: 303-350-5114

PROPOSED LOCATION:

SESW 02 110S 220E

SURFACE: 0811 FSL 2125 FWL

BOTTOM: 0811 FSL 2125 FWL

UINTAH

BITTER CREEK (547)

LEASE TYPE: 3 - State

LEASE NUMBER: ML-47075

SURFACE OWNER: 1 - Federal

PROPOSED FORMATION: MVRD

COALBED METHANE WELL? NO

INSPECT LOCATN BY: / /

Tech Review	Initials	Date
Engineering	DRO	7/7/05
Geology		
Surface		

LATITUDE: 39.88455

LONGITUDE: -109.4235

RECEIVED AND/OR REVIEWED:

☒ Plat
☒ Bond: Fed[] Ind[] Sta[] Fee[]
(No. RLB0008031)
☒ Potash (Y/N)
☒ Oil Shale 190-5 (B) or 190-3 or 190-13
☒ Water Permit
(No. 43-2195)
☒ RDCC Review (Y/N)
(Date:)
☒ Fee Surf Agreement (Y/N)

LOCATION AND SITING:

___ R649-2-3.

Unit _____

___ R649-3-2. General

Siting: 460' From Qtr/Qtr & 920' Between Wells

___ R649-3-3. Exception

☒ Drilling Unit

Board Cause No: 210-04 (8/320')

Eff Date: 4-12-2004

Siting: 460' from drit u bary 920' from other wells

___ R649-3-11. Directional Drill

COMMENTS: _____

STIPULATIONS: 1- Federal Approval

2- Surface Csg Cont Strip

3- STATEMENT OF BASIS

NATURAL BUTTES FIELD NATURAL BUTTES UNIT

CAUSE: 197-10

T10S R22E

T11S R22E

ARCHY BENCH 11-22-11-2
ARCHY BENCH 11-22-21-2

BHL
11-22-21-2

ARCHY BENCH
STATE 1-2

BITTER CREEK 1-3

ARCHY BENCH 11-22-12-2
ARCHY BENCH 11-22-22-2

BHL
11-22-22-2

ARCHY BENCH
11-22-13-2

BHL
11-22-23-2

BITTER CREEK FIELD

CAUSE: 210-04 / 4-12-2004

ARCHY
BENCH ST 2-2
ARCHY BENCH
11-22-14-2

ARCHY BENCH 11-22-23-2
ARCHY BENCH 11-22-24-2

LIZZARD
CREEK 11-1

LIZZARD CREEK
FED 2-10 x
LIZZARD CREEK
FED 2-10

OPERATOR: ENDURING RES LLC (N2750)

SEC: 2 T. 11S R. 22E

FIELD: BITTER CREEK (547)

COUNTY: UTAH

CAUSE: 210-04 / 4-12-2004

Wells

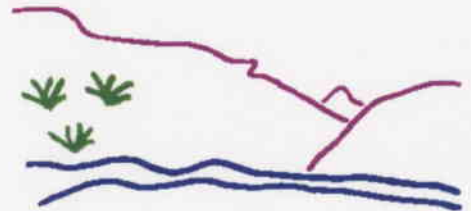
- ⊕ GAS INJECTION
- ⊙ GAS STORAGE
- × LOCATION ABANDONED
- ⊕ NEW LOCATION
- ⊕ PLUGGED & ABANDONED
- ⊕ PRODUCING GAS
- PRODUCING OIL
- ⊕ SHUT-IN GAS
- ⊕ SHUT-IN OIL
- × TEMP. ABANDONED
- TEST WELL
- ⊕ WATER INJECTION
- ⊕ WATER SUPPLY
- ⊕ WATER DISPOSAL

Units.shp

- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PENDING
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

Fields.shp

- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- PROPOSED
- STORAGE
- TERMINATED



Utah Oil Gas and Mining



PREPARED BY: DIANA WHITNEY
DATE: 21-JUNE-2005

DIVISION OF OIL, GAS AND MINING
APPLICATION FOR PERMIT TO DRILL
STATEMENT OF BASIS

OPERATOR: Enduring Resources, LLC
WELL NAME & NUMBER: Archy Bench 11-22-24-2
API NUMBER: 43-047-36791
LOCATION: 1/4,1/4 SESW Sec: 2 TWP: 11S RNG: 22 E 811 FSL 2125 FWL

Geology/Ground Water:

Enduring Resources proposes to set 2,000 feet of surface casing cemented to the surface. The base of the moderately saline water is estimated at 3,200 feet. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius center of Section 2. The surface formation at this location is the Green River Formation. The Green River Formation is made up of interbedded limestones, shales and sandstones. Fresh water aquifers can be found in the Green River Formation and should be protected. The proposed surface casing should adequately protect any potentially useable aquifers.

Reviewer: Brad Hill **Date:** 07-11-05

Surface:

The Federal Government is the owner of the surface rights at this location. The BLM is the administrative agency for permitting of surface use. The operator is responsible for obtaining any needed permits or rights of way before causing any surface disturbance.

Reviewer: Brad Hill **Date:** 07-11-05

Conditions of Approval/Application for Permit to Drill:

None

-06 Enduring Archy Bench 1-22-24-2

Casing Schematic

Uita

Surface

8-5/8"
MW 8.4
Frac 19.3

TOC @
0.

279' Green River

TOC @
481.

1620
TOC Tail

Surface
2000. MD

w/18% washout
Surface w/ 8% washout
✓ Surface Stop

BHP
 $(.052)(10.2)(7616) = 4039$
 Anticipate -3960

2981 TOC Tail

3239 Washout

Gas
 $(.12)(7616) = 913$
 MASP = 3126

✓ w/15% Washout

Fluid
 $(.22)(7616) = 1675$
 MASP = 2364

BOPE - 3,000 ✓

5643 Mesa Verde

Surf esg - 2950.
 70% = 2065

Mat pressure @ shoe = 2804

Propose Test To 2065# ✓

4-1/2"
MW 10.2

Production
7616. MD

✓ Adequate DKO 7/7/05

Well name:

05-06 Enduring Archy Bench 11-22-24-2Operator: **Enduring Resources, LLC**String type: **Surface**

Project ID:

43-047-36791

Location: **Uintah County****Design parameters:****Collapse**Mud weight: 8.400 ppg
Design is based on evacuated pipe.**Minimum design factors:****Collapse:**

Design factor 1.125

Burst:

Design factor 1.00

Environment:H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 103 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 350 ft

Cement top: 481 ft

BurstMax anticipated surface pressure: 1,760 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 2,000 psi

No backup mud specified.

Tension:8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Tension is based on buoyed weight.

Neutral point: 1,748 ft

Non-directional string.

Re subsequent strings:Next setting depth: 7,616 ft
Next mud weight: 10.200 ppg
Next setting BHP: 4,035 psi
Fracture mud wt: 19.250 ppg
Fracture depth: 2,000 ft
Injection pressure 2,000 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft ³)
1	2000	8.625	24.00	J-55	ST&C	2000	2000	7.972	96.3

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	873	1370	1.570	2000	2950	1.48	42	244	5.82 J

Prepared by: Clinton Dworshak
Utah Div. of Oil & MiningPhone: 801-538-5280
FAX: 801-359-3940Date: June 27, 2005
Salt Lake City, Utah**Remarks:**

Collapse is based on a vertical depth of 2000 ft, a mud weight of 8.4 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

Well name:

05-06 Enduring Archy Bench 11-22-24-2Operator: **Enduring Resources, LLC**String type: **Production**

Project ID:

43-047-36791Location: **Uintah County****Design parameters:****Collapse**Mud weight: 10.200 ppg
Design is based on evacuated pipe.**Minimum design factors:****Collapse:**

Design factor 1.125

Burst:

Design factor 1.00

Environment:H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 182 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 1,500 ft

Cement top: Surface

BurstMax anticipated surface
pressure: 3,122 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 4,035 psi

No backup mud specified.

Tension:8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Non-directional string.

Tension is based on buoyed weight.

Neutral point: 6,455 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	7616	4.5	11.60	N-80	LT&C	7616	7616	3.875	176.5
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	4035	6350	1.574	4035	7780	1.93	75	223	2.98 J

Prepared Clinton Dworshak
by: Utah Div. of Oil & MiningPhone: 801-538-5280
FAX: 801-359-3940Date: June 27, 2005
Salt Lake City, Utah**Remarks:**

Collapse is based on a vertical depth of 7616 ft, a mud weight of 10.2 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.



State of Utah

**Department of
Natural Resources**

MICHAEL R. STYLER
Executive Director

**Division of
Oil, Gas & Mining**

JOHN R. BAZA
Division Director

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

July 11, 2005

Enduring Resources, LLC
475 17th Street, Suite 1500
Denver, Colorado 80202

Re: Archy Bench 11-22-24-2 Well, 811' FSL, 2125' FWL, SE SW, Sec. 2,
T. 11 South, R., Uintah County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. § 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-047-36791.

Sincerely,

A handwritten signature in black ink, appearing to read "Gil Hunt".

Gil Hunt
Acting Associate Director

jc
Enclosures

cc: Uintah County Assessor
SITLA
Bureau of Land Management, Vernal District Office

Operator: Enduring Resources, LLC
Well Name & Number Archy Bench 11-22-24-2
API Number: 43-047-36791
Lease: ML-47075

Location: SE SW **Sec.** 2 **T.** 11 South **R.** 22 East

Conditions of Approval

1. General

Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

2. Notification Requirements

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- 24 hours prior to cementing or testing casing
- 24 hours prior to testing blowout prevention equipment
- 24 hours prior to spudding the well
- within 24 hours of any emergency changes made to the approved drilling program
- prior to commencing operations to plug and abandon the well

The following are Division of Oil, Gas and Mining contacts and their work telephone numbers (please leave a voice mail message if the person is not available to take the call):

- Dan Jarvis at (801) 538-5338
- Carol Daniels at (801) 538-5284 (spud)

3. Reporting Requirements

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. Compliance with the State of Utah Antiquities Act forbids disturbance of archeological, historical, or paleontological remains. Should archeological, historical or paleontological remains be encountered during your operations, you are required to immediately suspend all operations and immediately inform the Trust Lands Administration and the Division of State History of the discovery of such remains.

5. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached)

6. State approval of this well does not supersede the required federal approval, which must be obtained prior to drilling.

7. Surface casing shall be cemented to the surface.



Enduring Resources

475 17th Street Suite 1500 Denver Colorado 80202
Telephone 303 573-1222 Fax 303 573 0461

43-047-36791

August 9, 2005

CONFIDENTIAL

Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P. O. Box 145801
Salt Lake City, Utah 84114-5801

Attn.: Ms. Diana Whitney

RE: Cultural Resource Inventory Report # MOAC 05-196
Paleontological Reconnaissance Report # MOAC 05-197
Well Locations, Access Road and Pipelines **Sec 2 T11S-R22E**
Uintah County, Utah

Dear Ms. Whitney:

Enclosed are the referenced reports for the following proposed wells.

Archy Bench #11-22-11-2	Archy Bench #11-22-14-2	Archy Bench #11-22-23-2
Archy Bench #11-22-12-2	Archy Bench #11-22-21-2	Archy Bench #11-22-24-2
Archy Bench #11-22-13-2	Archy Bench #11-22-22-2	

If any questions arise or additional information is required, please contact me at 303-350-5114.

Sincerely,

Phyllis Sobotik
Regulatory Specialist

/ps
Enclosures:

RECEIVED

AUG 12 2005

DIV. OF OIL, GAS & MINING

CULTURAL RESOURCE INVENTORY FOR
ENDURING RESOURCES' FIVE PROPOSED
WELL LOCATIONS ON BITTER CREEK,
(ARCHY BENCH 11-22-11-2, 11-22-12-2,
11-22-13-2, 11-22-14-2, AND 11-22-24-2)
IN T 11S, R22E, SEC. 2
UINTAH COUNTY, UTAH

RECEIVED

AUG 12 2005

DIV. OF OIL, GAS & MINING

CULTURAL RESOURCE INVENTORY FOR
ENDURING RESOURCES' FIVE PROPOSED
WELL LOCATIONS ON BITTER CREEK,
(ARCHY BENCH 11-22-11-2, 11-22-12-2,
11-22-13-2, 11-22-14-2, AND 11-22-24-2)
IN T 11S, R22E, SEC. 2
UINTAH COUNTY, UTAH

By:

Todd B. Seacat
and
Kate Freudenberg

Prepared For:

Bureau of Land Management
Vernal Field Office

Prepared Under Contract With:

Enduring Resources, LLC
475 17th Street, Suite 1500
Denver, Colorado 80202

Prepared By:

Montgomery Archaeological Consultants
P.O. Box 147
Moab, Utah 84532

MOAC Report No. 05-196

27 June 2005

United States Department of Interior (FLPMA)
Permit No. 05-UT-60122

State of Utah Antiquities Project (Survey)
Permit No. U-05-MQ-0614b

ABSTRACT

In June 2005, a cultural resource inventory was conducted by Montgomery Archaeological Consultants Inc. (MOAC) for Enduring Resources' proposed five Archy Bench wells and pipeline corridors: Archy Bench 11-22-11-2, 11-22-12-2, 11-22-13-2, 11-22-14-2, and 11-22-24-2. The project area occurs along Bitter Creek road west of Archy Bench. The legal description for the project area is Township 11 South, Range 22 East, Section 2. A total of 59.7 acres were surveyed, all of which occurred on BLM land.

The cultural resource inventory resulted in locating one prehistoric site with a historic component (42Un4826) which is eligible for the National Register of Historic Places. Three other historic sites (42Un4827, 42Un4828, and 42Un4829) were located and are not eligible for the National Register of Historic Places.

In summary, the inspection of Enduring Resources' proposed five Archy Bench wells and pipeline corridors resulted in the documentation of four archaeological sites (42Un4826, 42Un4827, 42Un4828, and 42Un4829). Site 42Un4826 is considered eligible to the NRHP and should be avoided by the undertaking. To facilitate avoidance during the construction activities, it is recommended that a temporary fence be erected at the sites' boundary. In addition, the construction of Archy Bench 11-22-11-2 well location should be monitored by a qualified archaeologist. Based on these avoidance procedures, a recommendation of "no historic properties affected" pursuant to Section 106, CFR 800 is proposed for this project.

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INTRODUCTION

A cultural resource inventory was conducted by Montgomery Archaeological Consultants Inc. (MOAC) in June 2005 for Enduring Resources' five proposed well locations. The well locations are designated: Archy Bench 11-22-11-2, 11-22-12-2, 11-22-13-2, 11-22-14-2 and 11-22-24-2. The project area occurs in the Archy Bench area on Bitter Creek, south of Vernal, Utah. The survey was implemented at the request of Ms. Phyllis Sobotik, Enduring Resources, LLC, Denver, Colorado. A total of 59.7 acres was inventoried for cultural resources on public land administered by the Bureau of Land Management (BLM), Vernal Field Office.

The objective of the inventory was to locate, document, and evaluate any cultural resources within the project area in order to comply with Section 106 of 36 CFR 800, the National Historic Preservation Act of 1966 (as amended). Also, the inventory was implemented to attain compliance with a number of federal and state mandates, including the National Environmental Policy Act of 1969, the Archaeological and Historic Conservation Act of 1972, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and Utah State Antiquities Act of 1973 (amended 1990).

The fieldwork was performed on between June 11 and 13, 2005 by Todd B. Seacat (Project Archaeologist) and directed by Keith R. Montgomery (Principal Investigator) under the auspices of U.S.D.I. (FLPMA) Permit No. 05-UT-60122 and State of Utah Antiquities Permit (Survey) No. U-05-MQ-0614b issued to MOAC.

A file search was conducted by Marty Thomas of the Utah Division of State Historic Antiquities Section on June 15, 2005. The file search revealed that several previous inventories have been completed in the vicinity of the present project area. In 1980, Gordon and Kranzush Consultants inventoried a Natural Gas Pipeline Company corridor revealing no archaeological sites (Gordon 1980). Again in 1980 this company surveyed a proposed pipeline in the area and located no cultural resources (Gordon 1980). In 1984, Western Wyoming College conducted an inventory for the Natural Gas Pipeline Company; no cultural resources were found (Creasman, 1984). In 2002, Montgomery Archaeological Consultants (MOAC) completed a cultural resource inventory under contract with Buys and Associates for the Veritas DGC Land, Inc. Uintah Seismic Project. Of the 75 archaeological sites found or revisited, none lie near the current project area (Elkins and Montgomery 2002, U-02-MQ-0243b,p,s). This project identified 19 projects previously completed near the project area; however, no previously recorded sites were identified. In 2004, MOAC completed a cultural resource inventory of the proposed Seep Ridge West Expansion pipeline corridor for Miller, Dyer & Co. (Drake 2004) which resulted in the identification of three previously recorded sites (42Un2383, 42Un2570 and 42Un2761) and four new archaeological sites (42Un4387 through 42Un4390). None of the sites are near the current project area. In summary, while several projects have been completed near the project area, there are no previously recorded sites within the area.

DESCRIPTION OF PROJECT AREA

Enduring Resources' proposed five Archy Bench wells with associated access/pipeline corridors is situated on Bitter Creek, Uintah County, Utah. The legal description is Township 11 South, Range 22 E, Section 2 (Figure 1).

Table 1: Enduring Resources' Proposed Five Archy Bench Wells and Pipeline Corridors on Bitter Creek.

Well Location	Legal Locations	Pipeline	Cultural Resources
Archy Bench 11-22-11-2	NW, NW Sec. 2 T11S, R22E	Pipeline: 1,400 ft.	42Un4826 42Un4827 42Un4828
Archy Bench 11-22-12-2	SW, NW Sec. 2 T11S, R22E	Pipeline: 1,050 ft.	None
Archy Bench 11-22-13-2	NW, SW Sec. 2 T11S, R22E	Pipeline: 420 ft.	42Un4829
Archy Bench 11-22-14-2	SW, SW Sec. 2 T11S, R22E	Pipeline: 940 ft.	None
Archy Bench 11-22-24-2	SE, SW Sec. 2 T11S, R22E	None	None

Environment

The study area lies within the Uinta Basin physiographic unit, a distinctly bowl-shaped geologic structure (Stokes 1986:231). The Uinta Basin ecosystem is within the Green River drainage, considered to be the northernmost extension of the Colorado Plateau. The geology is comprised of Tertiary age deposits which include Paleocene age deposits, and Eocene age fluvial and lacustrine sedimentary rocks. The Uinta Formation, which is predominate in the project area, occurs as eroded outcrops formed by fluvial deposited, stream laid interbedded sandstone and mudstone, and is known for its prolific paleontological localities.

Specifically, the project area is situated in the ephemeral drainage area between Cottonwood Wash and Willow Creek. Surface geology consists of hard pan residual soil armored with shale and sandstone pebbles. The elevation ranges between 5700 ft and 5900 ft a.s.l. The project occurs within the Upper Sonoran Desert Shrub Association which includes sagebrush, shadscale, greasewood, mat saltbush, snakeweed, rabbitbrush, prickly pear cactus, Indian ricegrass and other grasses. Modern disturbances include roads and oil/gas development.

Cultural Overview

The cultural-chronological sequence represented in the area includes the Paleoindian, Archaic, Fremont, Protohistoric, and Euro-American stages. The earliest inhabitants of the region are representative of the Paleoindian stage (ca. 12,000-8,000 B.P.), characterized by the adaptation to terminal Pleistocene environments and by the exploitation of big game fauna. The presence of Paleoindian hunters in the Uinta Basin region is implied by the discovery of Clovis and Folsom fluted points (ca. 12,000 B.P. - 10,000 B.P.), as well as the more recent Plano Complex lanceolate points (ca. 10,000 B.P. - 7,000 B.P.). Near the project area, a variety of Plano Complex Paleoindian projectile points have been documented, including Goshen, Alberta, and Midland styles

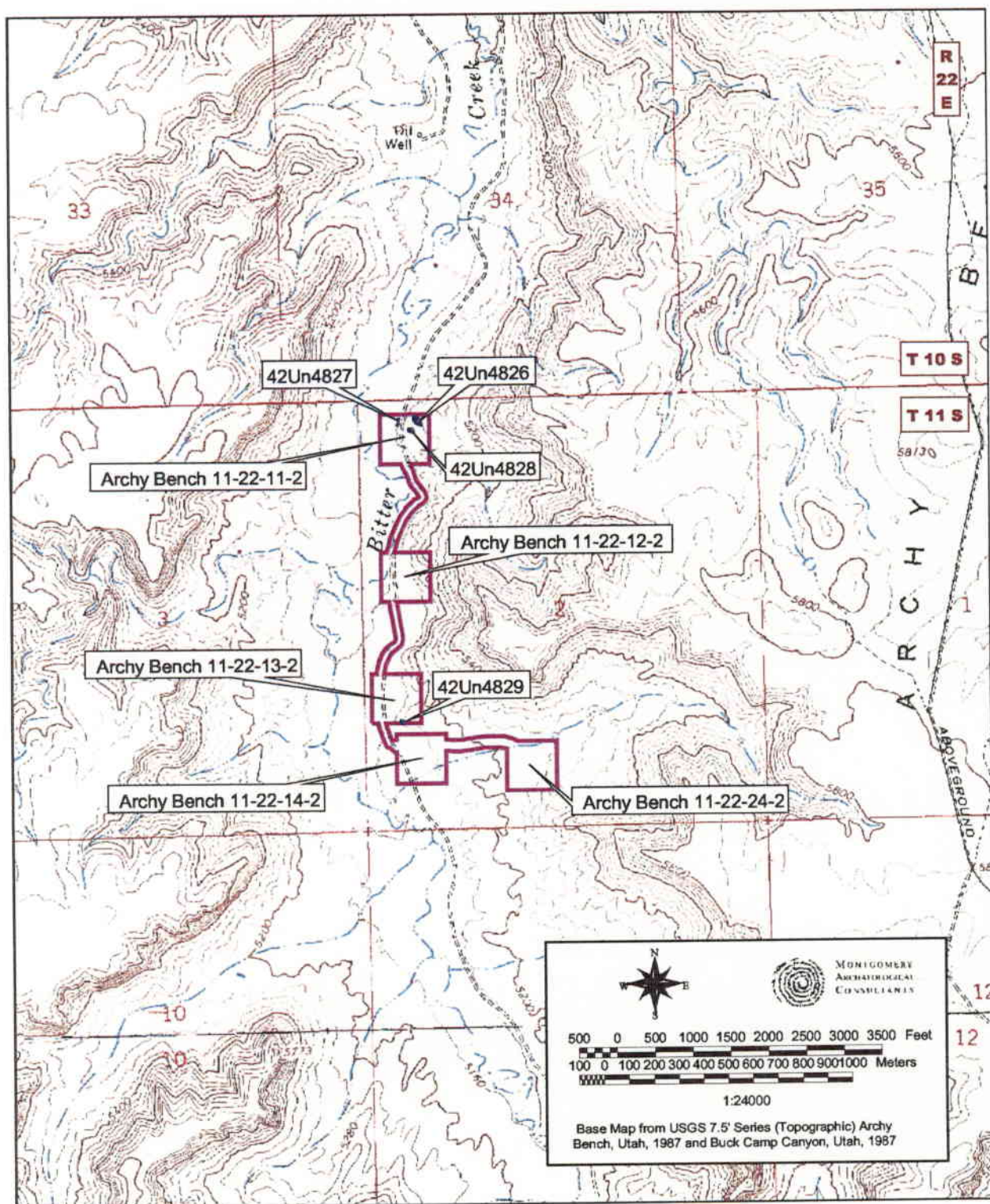


Figure 1. Inventory Area of Enduring Resources' Proposed Five Archy Bench Well Locations and Pipeline Corridor on Bitter Creek in Uintah County, Utah.

(Hauck 1998). No sites with evidence of Folsom lithic technology have previously been documented near the project area. Spangler (1995:332) reports that there are no sealed cultural deposits in association with extinct fauna or with chronologically distinct Paleoindian artifacts in Utah. Specifically in the Uinta Basin, few Paleoindian sites have been adequately documented, and most evidence of Paleoindian exploitation of the area is restricted to isolated projectile points recovered in nonstratigraphic contexts. Copeland and Fike (1998:21) argue that many areas in Utah are conducive to the herding behavior of megafauna, and that there is a high probability that many of the sites in Utah of unknown age are Paleoindian.

The Archaic stage (ca. 8,000 B.P.-1,500 B.P.) is characterized by the dependence on a foraging subsistence, with peoples seasonally exploiting a wide spectrum of plant and animal species in different ecozones. The shift to an Archaic lifeway was marked by the appearance of new projectile point types, and the development of the atlatl, perhaps in response to a need to pursue smaller and faster game (Holmer 1986). In the Uinta Basin, evidence of Early Archaic presence is relatively sparse compared to the subsequent Middle and Late Archaic periods. Early Archaic (ca. 6000-3000 B.C.) sites in the Basin include sand dune sites and rockshelters primarily clustered in the lower White River drainage (Spangler 1995:373). Early Archaic projectile points recovered from Uinta Basin contexts include Pinto Series, Humboldt, Elko Series, Northern Side-notched, Hawken Side-notched, Sudden Side-notched and Rocker Base Side-notched points. Excavated sites in the area with Early Archaic components include Deluge Shelter in Dinosaur National Monument, and open campsites along the Green River and on the Diamond Mountain Plateau (Spangler 1995:374). The Middle Archaic (ca. 3000-500 B.C.) is characterized by improved climatic conditions and an increase in human population on the northern Colorado Plateau. Several stratified Middle Archaic sites have been excavated and dozens of sites have been documented in the Uinta Basin. Middle Archaic sites in the area reflect cultural influences from the Plains, although a Great Basin and/or northern Colorado Plateau influence is represented in the continuation of the Elko Series projectile points. Subsistence data from Middle Archaic components indicate gathering and processing of plants as well as faunal exploitation (e.g., mule deer, antelope, bighorn sheep, cottontail rabbit, muskrat, prairie dog, beaver and birds). The Late Archaic period (ca. 500 B.C.-A.D. 550) in the Uinta Basin is distinguished by the continuation of Elko Series projectile points with the addition of semi-subterranean residential structures at base camps. By about A.D. 100, maize horticulture and Rose Springs arrow points had been added to the Archaic lifeway. In the Uinta Basin, the earliest evidence of Late Archaic architecture occurs at the Cockleburr Wash Site (42Un1476) where a temporary structure, probably a brush shelter, yielded a date of 316 B.C. (Tucker 1986). The structure was probably associated with seasonal procurement of wild floral resources gathered along Cliff Creek.

The Formative stage (A.D. 500-1300) is recognized in the area as the Uinta Fremont as first defined by Marwitt (1970). This stage is characterized by a reliance upon domesticated corn and squash, increasing sedentism, and in its later periods, substantial habitation structures, pottery, and bow and arrow weapon technology. Based on the evidence from Caldwell Village, Boundary Village, Deluge Shelter, Mantles Cave and others, the temporal range of the Uinta Fremont appears to be from A.D. 650 to 950. This variant is characterized by shallow, saucer-shaped pithouse structures with randomly placed postholes and off-center firepits, some of which were adobe-rimmed. Traits considered unique or predominate to the Uinta Basin include calcite-tempered pottery, two-handled wide-mouth vessels, Utah type metates, the use of gilsonite for pottery repair, settlement on tops of buttes and large-shouldered bifaces (Shields 1970).

Archaeological evidence suggests that Numic peoples appeared in east-central Utah at approximately A.D. 1100 or shortly before the disappearance of Formative-stage peoples (Reed 1994). The archaeological remains of Numic-speaking Utes consist primarily of lithic scatters with low quantities of brown ware ceramics, rock art, and occasional wickiups. The brown ware ceramics appear to be the most reliable indicator of cultural affiliation, as Desert Side-notched and Cottonwood Triangular points were manufactured by other cultural groups beside the Ute (Horn, Reed, and Chandler 1994:130). The Ute appear to have been hunters and gatherers who exploited various fauna and flora resources. According to macrobotanical and faunal data from dated components, deer, elk, pronghorn, bison, and small game were acquired (Reed 1994:191). Plant materials thought to have been exploited for food include goosefoot, grass seeds, pinyon nuts, juniper berries, squawbush berries and leaves, hackberry seeds and possibly saltbush seeds, knotweed, chokecherry, and chickweed (Reed 1994:191).

On May 5, 1864 Congress passed a law confirming the 1861 executive order setting up the Uintah Reservation (Burton 1996:24). This treaty provided that the Ute people give up their land in central Utah and move within one year to the Uintah Reservation without compensation for loss of land and independence. The Uinta-ats (later called Tavaputs), PahVant, Tumpanawach, and some Cumumba and Sheberetch of Utah were gathered together at the Uintah agency during the late 1860s and early 1870s to form the Uintah Band (Burton 1996:18-19). In the 1880 treaty council the White River Utes, who had participated in the Meeker Massacre, were forced to sell all their land in Colorado and were moved under armed escort to live on the Uintah Reservation (Callaway, Janetski, and Stewart 1986:339). Shortly thereafter, 361 Uncompahgre Utes were forced to sell their lands, and were relocated to the Ouray Reservation adjacent to the southern boundary of the Uintah Reservation. This area embraced a tract of land to the east and south of the Uintah Reservation below Ouray lying east of the Green River. A separate Indian Agency was established in 1881 with headquarters at Ouray which was located across the river from where the first military post, Fort Thornburgh was located. The Department of War established Fort Thornburgh along the Green River in 1881 to maintain peace between the settlers of Ashley Valley.

The infantry who participated in the relocation of the Colorado Indians ensured that the Uncompahgre and White River Utes remained on the two reservations (Burton 1996:28). In the late 1880s, gilsonite was discovered in the Uintah Basin, and Congress was persuaded to apportion 7,040 acres from the reservation so the mineral could be mined.

The earliest recorded visit by Europeans to Utah was the Dominguez-Escalante expedition, of 1776. From the early 1820s to 1845, the Uinta Basin became an important part of the expanding western fur trade. Homesteading began in 1878 with Thomas Smart, one of the first white settlers to settle east of Ouray. In 1879, about forty cowboys and several large herds of cattle wintered on the White River. The winter of 1879-1880 saw the establishment of a settlement near the White River by several pioneers and their families including Ephraim Ellsworth, the Remingtons, and the Campbells. The person most responsible for organizing a permanent homesteading movement in Ouray Valley was William H. Smart, the brother of Thomas Smart, who became president of the Wasatch LDS Stake in 1901 (Burton 1998). When the Ute reservation was opened to white homesteaders in 1905, Smart organized several exploration trips into the area that later attracted many LDS families.

Initially, livestock was the main industry of white homesteaders in Uintah County. Two factors - free grass and the availability of water - influenced men to move their cattle into the county. Most of the land in the area was part of the public domain and no territory or state could tax it. Cattle were eventually brought up east as far as the Green River and then to the surrounding mountains. Large cattle herds had been coming to Brown's Park from Texas and other eastern areas since the early 1850s. The K Ranch was a large cattle operation owned by P.R. Keiser which brought many cowboys to the area. The ranch was located on the Utah-Colorado line with property in both states. Charley Hill, who came to Ashley Valley as a trapper for the Hudson Bay Company, started a cattle company on Hill Creek and Willow Creek in the Book Cliffs (Burton 1996:109). They later moved out when the government set this section aside for the Ouray Indian Agency. Other prominent men in the cattle industry included A.C. Hatch, Dan Mosby, and James McKee. Cattle rustling became an increasingly large problem as cattle herds grew, and conflict resulted between the small and large cattle companies. In 1912, the Uintah Cattle and Horse Growers Association was organized to protect the livestock industry from thieves and to issue an authorized brand book (Ibid: 110).

The sheep industry later became part of Uintah County's economic backbone, and contributed to the decline of the cattle industry. Sheep were first introduced to the valley during the winter of 1879 when Robert Bodily brought in sixty head (Burton 1996:111). Sheep were able to survive the hard winters much better than cattle. By the mid-1890s, more than 50,000 head of sheep were in the region; and the production of wool became very important. In 1897, C.S. Carter began building shearing corrals. In 1899, 500,000 pounds of wool were shipped from the county and sold for twelve and one-half cents per pound (Ibid:111). In 1906, the Uintah Railway Company built shearing pens on the Green River to encourage the shipping of wool by train; and in 1912, pens were built at Bonanza and Dragon. Beginning in the 1940's Mexican sheep-shearing crews and Greek sheepmen from the Price and Helper areas came into the area. The Taylor Grazing Act was passed in 1934, allotting specific areas or "districts" to stockmen for livestock grazing that required permits. This act was a forerunner of the Bureau of Land Management, which was established in 1946 and eventually assumed responsibility for the administration of grazing laws on public land (Burton 1996:115).

Uintah County is also known for its natural resources. Coal, copper, iron, asphalt, shale, and especially gilsonite, were important to the mining industry. When gilsonite was discovered in the Uinta Basin in the 1880s, Congress was persuaded to apportion 7,040 acres from the Ute reservation so the mineral could be mined. This area became known as "The Strip" and later developed into the townsite of Moffat (later renamed Gusher). Gilsonite is a light-weight lustrous black hydrocarbon mineral that can easily be crushed into a black-brown powder. It can be found in commercial quantities only in the Uinta Basin. The earliest use of the mineral was in buggy paints and beer-vat linings. Today it is used in over a hundred products ranging from printing inks to explosives and automobile body sealer and radiator paint (Burton 1998:343). Mining camps also sprang up near the Colorado line in Bonanza, Dragon, and Watson starting in about 1903. Many immigrants, including Greeks and Chinese, worked in the mines. Bonanza became one of the largest and most modern functioning mining camps in the area beginning in 1921 and reached its peak in 1937. It was chosen as the Barber gilsonite company headquarters, because it was near the largest deposits of gilsonite in the area. Miners from Dragon, Rainbow, and other neighboring communities were relocated to Bonanza.

SURVEY METHODOLOGY

An intensive pedestrian survey was performed for this project which is considered 100% coverage. At the proposed well location, a ten acre area centered on the center stake of the location was surveyed by the archaeologist walking parallel transects spaced no more than 10 m (30 ft) apart. The pipeline corridor was 100 ft wide, surveyed by walking parallel transects along the staked centerline, spaced no more than 10 m (30 ft) apart. Ground visibility was considered to be good. A total of 59.7 acres was inventoried for cultural resources on public land administered by the Bureau of Land Management (BLM), Vernal Field Office.

INVENTORY RESULTS

The inventory of Enduring Resources' five proposed well locations with associated access/ and pipeline corridors resulted in the documentation of four new archaeological sites (42Un4826, 42Un4827, 42Un4828, and 42Un4829).

Smithsonian Site No.: 42Un4826
Temporary Site No.: 05-196-01
Legal Description: NE/NW/NW of Sec. 2, T11S, R22E
NRHP Eligibility: Eligible, Criterion D

Description: This is a prehistoric and historic component site associated with a small rockshelter and seep spring. The site is situated at the base of an east-west trending sandstone cliff on the east side of Bitter Creek Canyon. The prehistoric component is comprised of lithic artifacts and a small petroglyph panel. The historic component consists of a light trash scatter, historic graffiti, and a dry-laid masonry sheep enclosure.

Prehistoric cultural material consists of a late stage biface fragment, seven flakes, one piece of angular debris, and one quartzite mano fragment. Tool stone is dominated by chert/chalcedony with one piece of igneous rock. Debitage consists of tertiary and secondary flakes which suggests that latter stages of tool manufacture were occurring on site. One burned rock feature (Fea. B) as well as scattered fire-cracked rock indicate the presence of thermal features. This coupled with a mano fragment may indicate domestic activities such as food preparation were also occurring on site. At the northwestern edge of the site is a small petroglyph panel (Fea. A). It consists of a X motif, a anthropomorphic stick figure, a vertical line, and a horizontal line with a dot. The rock art appears to be Numic (probably Ute) based on the type of elements (Cole 1990). Finally, the rockshelter (Fea. E) which is fairly large but wet due to the seep spring may not have been inhabited although some potential midden deposits could occur around the opening.

The historic component consists of a light scatter of historic trash associated with historic inscriptions, and a dry-laid masonry enclosure. The inscriptions (Fea. D) occur on a large sandstone boulder at the southeastern end of the site and consist of the following names, initials, and dates: C. Hoel June. 17th 1912, J.P.T b/ ' 17 ", MM, T, A, KA and TOM LOPEZ 2.17 1963. Historic artifacts include amethyst bottle glass, aqua bottle glass, clear bottle glass, four external friction Prince Albert tobacco tins, 11 open top cans, five hole-in-top milk cans, a lard pail, a meat can, galvanized sheet metal, yellow glazed earthenware sherds, porcelain sherds, and one shoe sole. Diagnostic materials consist of amethyst glass (pre-1920), aqua glass (pre-1930), a type 9 evaporated milk can (ca. 1915-1930), an AHK bottle trademark (post-1944) and an ABGM Co. bottle trademark (1886-1928). The masonry wall or enclosure (Fea. C) consists of stacked tabular sandstone about three to four tier high and incorporating in-place sandstone boulders to make an area about 3 x 3 m square. This "structure" is interpreted as a lambing pen.

Smithsonian Site No.: 42Un4827
Temporary Site No.: 05-196-02
Legal Description: NW/NW/NW of Sec. 2, T11S, R22E
NRHP Eligibility: Not Eligible

Description: This is a small historic trash scatter located on a bench east of Bitter Creek. Cultural materials include eight hole-in-top cans, 10 open top cans, and a galvanized metal wash basin. No features were observed. Diagnostic materials are sparse and consist of seven type 9 hole-in-top evaporated milk cans which are thought to date between 1915-1930. Therefore, it is likely this site dates to the first third of the 20th century, probably related to livestock tending or simply trash discarded along the Bitter Creek Canyon road.

Smithsonian Site No.: 42Un4828
Temporary Site No.: 05-196-03
Legal Description: NE/NW/NW of Sec. 2, T11S, R22E
NRHP Eligibility: Not Eligible

Description: This is a trash scatter situated on the canyon floor east of Bitter Creek. Cultural materials are dominated by various tin cans although a small quantity of clear glass possibly from a drinking glass was also observed. Approximately 50 tin cans are scattered across the site with perhaps 25 to 35 in a 5 x 3 m concentration near the center. These include two hole-in-cap cans (pre-1940), seven open top cans and can tops marked "Sanitary" (1904-1908), five marked with a "C" (pre-1934?), one Towle's Log Cabin syrup can (1909-1955), and a short coffee can. In addition, 10 type 9 hole-in-top milk cans (1915-1930) and one type 16 milk can (1931-1948) also occur on site. The site appears to represent two discard episodes the earliest between 1904 and 1908 and several later ones dating from 1915 to 1948. Based on the type of artifacts, the locality most likely functioned as short-term range related camps.

Smithsonian Site No.: 42Un4829
Temporary Site No.: 05-196-04
Legal Description: NE/SW/SW of Sec. 2, T11S, R22E
NRHP Eligibility: Not Eligible

Description: This is a small sparse trash scatter situated on the crest and slope of a ridge along the east side of Bitter Creek. Cultural materials consist of 13 tin cans and one broken beer bottle. Tin cans include five open top food cans, four hole-in-top evaporated milk cans, one external friction, hinged lid pocket tobacco tin, a paint can, one open top juice can, and a lard can lid. Diagnostic artifacts consists of the beer bottle marked with a WF & S trademark (Wm. Franzen & Son 1900-1921) and type 9 (1915-1930) and type 19 (1930-1975) milk cans. The site probably functioned as a short-term camp related to livestock tending. Dated materials indicate the site was probably occupied in the early-middle 20th century between 1915 and 1935.

NATIONAL OF HISTORIC PLACES EVALUATION

The National Register Criteria for Evaluation of Significance and procedures for nominating cultural resources to the National Register of Historic Places (NRHP) are outlined in 36 CFR 60.4 as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, material, workmanship, feeling, and association, and that they:

- a)...are associated with events that have made a significant contribution to the broad patterns of our history; or
- b)...are associated with the lives of persons significant to our past; or
- c)...embody the distinctive characteristics of a type, period, or method of construction; or that represents the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d)...have yielded or may be likely to yield information important in prehistory or history.

The cultural resource inventory resulted in the documentation of four new archaeological sites. Only the prehistoric and historic component site (42Un4826) is recommended as eligible to the NRHP under Criteria D. The prehistoric component could address such research topics as chronology, subsistence strategies, site chronology, stone tool technology, and site function. The historic component exhibits a feature and a variety of cultural materials. There is also potential for subsurface cultural remains. Historic trash scatters 42Un4827, 42Un4828, and 42Un4829 are recommended as not eligible because they are unlikely to contribute to the history of the area. These sites lack artifact density, diversity, features, and fail to possess subsurface cultural material.

CONCLUSIONS AND RECOMMENDATIONS

The cultural resource inventory of Enduring Resources' five proposed well locations with associated pipeline/access corridors resulted in the documentation of four new archaeological sites (42Un4826, 42Un4827, 42Un4828, and 42Un4829). Site 42Un4826 is considered eligible to the NRHP and should be avoided by the undertaking. To facilitate avoidance during the construction activities, it is recommended that a temporary fence be erected at the sites' boundary. In addition, the construction of Archy Bench 11-22-11-2 well location should be monitored by a qualified archaeologist. Based on these avoidance procedures, a recommendation of "no historic properties affected" is proposed for the undertaking pursuant to Section 106, CFR 800.

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APPENDIX A:
INTERMOUNTAIN ANTIQUITY COMPUTER SYSTEM (IMACS)
SITE INVENTORY FORMS

On File At:

Bureau of Land Management
Vernal Field Office
and
Division of State History
Salt Lake City, UT

Paleontological Reconnaissance Report

Enduring Resources Proposed Well Pads, Access Roads and Pipeline Corridors for Archy Bench #11-22-11-2, #11-22-12-2, #11-22-13-2, #11-22-14-2, #11-22-24-2 (Sec. 2, T 11 S, R 22 E); Red Wash #9-24-23-30, #9-24-34-30 (Sec. 30 T 9 S, R 24 E); Red Wash³⁴ *Bonanza* #9-24-24-23 (Sec. 23, T 9 S, R 24 E); Southam Canyon #9-24-41-34 (Sec. 34, T 9 S, R 24 E); Southam Canyon #9-24-23-36, #9-24-24-36 (Sec. 36, T 9 S, R 24 E); Southam Canyon #10-25-11-6 (Sec. 6, T 10 S, R 25 E)

**Archy Bench, Bonanza, Red Wash SE,
and Southam Canyon Topographic
Quadrangles Uintah County, Utah**

July 19, 2005

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INTRODUCTION

At the request of Phyllis Sobotik, of Enduring Resources, LLC, and authorized by John Mayers of the BLM Vernal Field Office and James Kirkland of the Office of the State Paleontologist a paleontological reconnaissance survey of Enduring's proposed Well Pads, Access Roads and Pipeline Corridors for Archy Bench #11-22-11-2, #11-22-12-2, #11-22-13-2, #11-22-14-2, #11-22-24-2 (Sec. 2, T 11 S, R 22 E); Red Wash #9-24-23-30, #9-24-34-30 (Sec. 30, T 9 S, R 24 E); Red Wash #9-24-24-23 (Sec. 23, T 9 S, R 24 E); Southam Canyon #9-24-41-34 (Sec. 34, T 9 S, R 24 E); Southam Canyon #9-24-23-36, #9-24-24-36 (Sec. 36, T 9 S, R 24 E); Southam Canyon #10-25-11-6 (Sec. 6, T 10 S, R 25 E) was conducted by Stephen Sandau June 8-11, 2005. The survey was conducted under the Utah BLM Paleontological Resources Use Permit #UT-S-05-33 and the Utah Paleontological Investigations Permit #04-345. This survey to collect any paleontological materials discovered during the construction processes in danger of damage or destruction was done to meet requirements of the National Environmental Policy Act of 1969, and other State and Federal laws and regulations that protect paleontological resources.

FEDERAL AND STATE REQUIREMENTS

As mandated by the US Department of the Interior Bureau of Land Management, paleontologically sensitive geologic formations in BLM lands that are considered for exchange or may be impacted due to ground disturbance require paleontological evaluation. This requirement complies with:

- 1) The National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321 et. Seq., P.L. 91-190);
- 2) The Federal Land Policy and Management Act (FLPMA) of 1976 (90 Stat. 2743, 43 U.S.C. § 1701-1785, et. Seq., P.L. 94-579).
- 3) The National Historic preservation Act. 16 U.S.C. § 470-1, P.L. 102-575 in conjunction with 42 U.S.C. § 5320; and
- 4) The Utah Geological Survey. S. C. A.: 63-73-1. (1-21) and U.C.A.: 53B-17-603

Under policy dictated by the BLM Manual and Handbook H-8270-1 (July, 1998) formations are ranked according to their paleontological potential:

- *Condition 1* is applied to those areas known to contain fossil localities, and special consideration of the known resources is in need of evaluation.
- *Condition 2* is applied to areas that have exposures of geologic rock units known to have produced fossils elsewhere.
- *Condition 3* is applied to areas unlikely to produce fossils based on surficial geology.

Although these guidelines apply mostly to vertebrate fossils on lands under the direction of the BLM, they are equally designed to help protect rare plant and invertebrate fossils and will be used here with reference to State managed lands. It should be noted that many fossils, though common and unimpressive in and of themselves, can be important paleo-environmental, depositional, and chronostratigraphic indicators.

LOCATION

This project covers wells on land managed by the State of Utah Trust Lands Administration (SITLA) and on BLM land. The well pads and proposed pipeline corridor for Enduring's Archy Bench #11-22-11-2, #11-22-12-2, #11-22-13-2, #11-22-14-2, #11-22-24-2 (Sec. 2, T 11 S, R 22 E) are four to five miles south by southwest of the White River, and some fifteen miles south west of Bonanza, UT. Red Wash #9-24-23-30, #9-24-34-30 (Sec. 30, T 9 S, R 24 E) lies approximately 3 miles north of the White River and four to five miles west of Bonanza, UT; Red Wash #9-24-24-23 (Sec. 23, T 9 S, R 24 E) is on the southwestern outskirts of Bonanza, UT; Southam Canyon #9-24-41-34 (Sec. 34, T 9 S, R 24 E) is about one and one half miles south by southwest of Bonanza; Southam Canyon #9-24-23-36, #9-24-24-36 (Sec. 36, T 9 S, R 24 E) and Southam Canyon #10-25-11-6 (Sec. 6, T 10 S, R 25 E) are approximately three miles south of Bonanza, UT and one to one and a half miles north of the White River. The project areas can be found on the Archy Bench, Bonanza, Red Wash SE, and Southam Canyon Topographic Quadrangles, Uintah County, Utah

PREVIOUS WORK

The basins of western North America have long produced some of the richest fossil collections in the world. Early Cenozoic sediments are especially well represented throughout the western interior. Paleontologists started field work in Utah's Uinta Basin as early as 1870 (Betts, 1871; Marsh, 1871, 1875a, 1875b). The Uinta Basin is located in the northeastern corner of Utah and covers approximately 31,000 sq. km (12,000 sq. miles) and ranges in elevation from 1,465 to 2,130 m (4,800 to 7,000 ft) (Marsell, 1964; Hamblin et al., 1987). Middle to late Eocene time marked a period of dramatic change in the climate, flora, (Stucky, 1992), and fauna (Black and Dawson, 1966) of North America.

GEOLOGICAL AND PALEONTOLOGICAL OVERVIEW

Early in the geologic history of Utah, some 1,000 to 600 Ma, an east-west trending basin developed creating accommodation for 25,000 feet of siliclastics. Uplift of that filled-basin during the early Cenozoic formed the Uinta Mountains (Rasmussen et al., 1999). With the rise of the Uinta Mountains the asymmetrical synclinal Uinta Basin is thought to have formed through the effects of down warping in connection with the uplift. Throughout the Paleozoic and Mesozoic, deposition fluctuated between marine and non-marine environments laying down a thick succession of sediments in the area now occupied by the Uinta Basin. Portions of these beds crop out on the margins of the basin due to tectonic events occurring during the late Mesozoic.

Early Tertiary Uinta Basin sediments were deposited in alternating lacustrine and fluvial environments. Large shallow lakes periodically covered most of the basin and surrounding areas during early to mid Eocene time (Abbott, 1957). These lacustrine sediments show up in the western part of the basin, dipping 2-3 degrees to the northeast and are lost in the subsurface on the east side. The increase of cross-bedded coarse-grained sandstone and conglomerates

preserved in paleo-channels indicates a transition to a fluvial environment toward the end of the epoch.

Four Eocene formations are recognized in the Uinta Basin: the Wasatch, Green River, Uinta, and Duchesne River, respectively (Wood, 1941). The Uinta Formation is subdivided into two lithostratigraphic units namely: the Wagonhound Member (Wood, 1934), formerly known as Uinta A and B (Osborn, 1895, 1929), and the Myton Member previously regarded as the Uinta C.

Within the Uinta Basin in northeast Utah, the Uinta Formation in the western part of the basin is composed primarily of lacustrine sediments inter-fingering with over-bank deposits of silt and mudstone and westward flowing channel sands, fluvial clays, and muds in the east (Bryant et al, 1990; Ryder et al, 1976). Stratigraphic work done by early geologists and paleontologists within the Uinta Formation focused on the definition of rock units and attempted to define a distinction between early and late Uintan faunas (Riggs, 1912; Peterson and Kay, 1931) biostratigraphy (Flynn, 1986; Prothero, 1996). Well known for its fossiliferous nature and distinctive mammalian fauna of mid-Eocene Age, the Uinta Formation is the type formation for the Uintan Land Mammal Age (Wood et al, 1941).

The Duchesne River Formation of the Uinta Basin in northeastern Utah is composed of a succession of fluvial and flood plain deposits composed of mud, silt, and sandstone. The source area for these late Eocene deposits is from the Uinta Mountains indicated by paleocurrent data (Anderson and Picard, 1972). In Peterson's (1931c) paper, the name "Duchesne Formation" was applied to the formation, and it was later changed to the "Duchesne River Formation" by Kay (1934). The formation is divided up into four members: the Brennan Basin, Dry Gulch Creek, Lapoint, and Starr Flat (Anderson and Picard, 1972). Debates concerning the Duchesne River Formation, as to whether its age was late Eocene or early Oligocene, have surfaced throughout the literature of the last century (Wood et al., 1941; Scott 1945). Recent paleo-magnetostratigraphic work (Prothero, 1996) shows that the Duchesne River Formation is late Eocene in time.

FIELD METHODS

In order to determine if the proposed pipeline corridors, access roads and well pads from this project contained any paleontological resources, a brief reconnaissance survey was performed. An on-site observation of the proposed areas undergoing surficial disturbance is necessary, because judgments made from topographic maps alone are often unreliable. Areas of low relief have potential to be erosional surfaces with the possibility of bearing fossil materials rather than surfaces covered by unconsolidated sediment or soils.

When found within the proposed construction areas, outcrops and erosional surfaces were checked to determine if fossils were present and to assess needs. Careful effort is made during surveys to identify and evaluate significant fossil materials or fossil horizons when they are found. Microvertebrates, although rare, are occasionally found in anthills or upon erosional surfaces, and are of particular importance.

PROJECT AREA

The project site is situated in the Wagonhound Member (Uinta A & B) of the Uinta Formation.

Archy Bench #11-22-11-2

The proposed well pad lies adjacent to an existing access road in the NW/NW quarter-quarter section of Sec. 2, T 11 S, R 22 E (Figure 1). A proposed pipeline follows the path of this road and ties into an existing pipeline in the SW/SW quarter-quarter section of Sec. 2, T 11 S, R 22 E. The proposed pad and pipeline rest on sage brush covered soil and colluvium. The surrounding slopes and ridges to the east consist of interbedded green, purple and tan colored silt and sandstone. Ledges of tan sandstone and silt lie to the west of the proposed well pad. No fossils were found at this site.

Archy Bench #11-22-12-2

The proposed well pad lies adjacent to an existing access road in the SW/NW quarter-quarter section of Sec. 2, T 11 S, R 22 E (Figure 1). The proposed well pad rests on soil and colluvium covered ground. Cliffs of tan sandstone lie to the east of the pad area. No fossils were found in the proposed construction site.

Archy Bench #11-22-13-2

The proposed well pad lies adjacent to an existing access road in the NW/SW quarter-quarter section of Sec. 2, T 11 S, R 22 E (Figure 1). The ground is covered with sandy soil and colluvium, and is vegetated with brush. No fossils were found at this locality.

Archy Bench #11-22-14-2

The proposed well pad lies adjacent to an existing access road in the SW/SW quarter-quarter section of Sec. 2, T 11 S, R 22 E (Figure 1). The area consists of soil covered ground and is vegetated with brush. No fossils were found in the proposed construction site.

Archy Bench #11-22-24-2

The proposed well pad is in the SE/SW quarter-quarter section of Sec. 2, T 11 S, R 22 E (Figure 1). The proposed access and pipeline tie in at the SW/SW quarter-quarter section of Sec. 2, T 11 S, R 22 E. The area consists of soil covered ground, and an outcrop of tan sandstone and siltstone lies off the eastern edge of the pad. No fossils were found within the proposed construction site.

Red Wash #9-24-23-30

The proposed access road and pipeline begin in the NW/SE quarter-quarter section and end in the NE/SW quarter-quarter section of Sec. 30, T 11 S, R 22 E (Figure 2). The area consists of soil covered ground vegetated with grass and low brush. No fossils were found in the proposed construction area.

Red Wash #9-24-34-30

The proposed short access road, pipeline and well pad lie in the SW/SE quarter-quarter section of Sec. 30, T 9 S, R 24 E (Figure 2). The ground is soil covered and vegetated with brush and grass. No fossils were found at this site.

Bonanza 34
Red Wash #9-24-24-23

The proposed well pad and short access are located in the SW/SE quarter-quarter section of Sec. 23, T 9 S, R 24 E, and the proposed long pipeline begins in the NW/NE quarter-quarter section of Sec. 27, T 9 S, R 24 E, following the path of an existing road, and then follows the path of the proposed access road (Figure 3). The area consists of rolling hills of soil covered ground vegetated with sage and grass. No fossils were found at this site.

Southam Canyon #9-24-41-34

The proposed well pad lies in the NE/NE quarter-quarter section of Sec. 34, T 9 S, R 24 E. The proposed access road begins in the NW/NE quarter-quarter section of Sec. 34, T 9 S, R 24 E, and the proposed long pipeline begins in the NW/NE quarter-quarter section of Sec. 27, T 9 S, R 24 E, follows the path of an existing road, then follows the path of the proposed access road (Figure 3). The ground is covered with soil and is vegetated with sage. Along the proposed access road are some exposures of tan sandstone with brown concretions, along with green silt and mudstone. No fossils were found in the proposed construction area.

Southam Canyon #9-24-23-36

The proposed well pad, short access road and pipeline lie in the NE/NW quarter-quarter section of Sec. 36, T 9 S, R 24 E. The proposed access road and pipeline tie into the proposed access and pipeline for Southam Canyon #9-24-24-36 (Figure 4). The area consists of soil covered ground with colluvium and some exposures of tan sandstone. No fossils were found in the proposed construction site.

Southam Canyon #9-24-24-36

The long proposed access road and pipeline begin in the SE/NE quarter-quarter section of Sec. 36, T 9 S, R 24 E, head southwest and enter the proposed well pad from the northwest in the SE/SW quarter-quarter section of Sec. 36, T 9 S, R 24 E (Figure 4). The area around the proposed access road has outcrops of tan sandstone containing petrified wood. No other fossils were found in the proposed construction area.

Southam Canyon #10-25-11-6

The proposed well pad and access road lie in the NW/NW quarter-quarter section of Sec. 6, T 10 S, R 25 E. The 2,900 ft. access enters the well pad from the south (Figure 4). To the northeast of the proposed well pad are outcrops of tan sandstone, and along the western flank of the southern extremity of access road are tan silt and shale in which was found fossils plant material and fish scales.

SURVEY RESULTS

WELL	GEOLOGY	PALEONTOLOGY
Archy Bench #11-22-11-2 (Sec. 2, T 11 S, R 22 E)	The pad and pipeline rest on sage brush covered soil and colluvium. The surrounding slopes and ridges to the east consist of interbedded green, purple and tan colored silt and sandstone. Ledges of tan sandstone and silt lie to the west of the proposed well pad.	No fossils were found. Condition 3.
Archy Bench #11-22-12-2 (Sec. 2, T 11 S, R 22 E)	The proposed well pad rests on soil and colluvium covered ground. Cliffs of tan sandstone lie to the east of the pad area.	No fossils were found. Condition 3.
Archy Bench #11-22-13-2 (Sec. 2, T 11 S, R 22 E)	The ground is covered with sandy soil and colluvium.	No fossils were found. Condition 3.
Archy Bench #11-22-14-2 (Sec. 2, T 11 S, R 22 E)	The area consists of soil covered ground.	No fossils were found. Condition 3.
Archy Bench #11-22-24-2 (Sec. 2, T 11 S, R 22 E)	The area consists of soil covered ground, and an outcrop of tan sandstone and siltstone lies off the eastern edge of the pad.	No fossils were found. Condition 3.
Red Wash #9-24-23-30 (Sec. 30, T 9 S, R 24 E)	The area consists of soil covered ground.	No fossils were found. Condition 3.
Red Wash #9-24-34-30 (Sec. 30, T 9 S, R 24 E)	The ground is soil covered.	No fossils were found. Condition 3.
Red Wash #9-24-24-23 (Sec. 23, T 9 S, R 24 E)	The area consists of rolling hills of soil covered ground.	No fossils were found. Condition 3.
Southam Canyon #9-24-41-34 (Sec. 34, T 9 S, R 24 E)	The ground is covered with soil. Along the proposed access road are some exposures of tan sandstone with brown concretions, along with green silt and mudstone.	No fossils were found. Condition 3.

Southam Canyon #9-24-23-36 (Sec. 36, T 9 S, R 24 E)	The area consists of soil covered ground with colluvium and some exposures of tan sandstone.	No fossils were found. Condition 3.
Southam Canyon #9-24-24-36 (Sec. 36, T 9 S, R 24 E)	The area around the proposed access road has outcrops of tan sandstone containing petrified wood.	Plant fossils were found. Condition 2.
Southam Canyon #10-25-11-6 (Sec. 6, T 10 S, R 25 E)	To the northeast of the proposed well pad are outcrops of tan sandstone, and along the western flank of the southern extremity of access road are tan silt and shale in which was found fossils plant material and fish scales.	Plant impressions and fish scales were found. Condition 2.

RECOMMENDATIONS

The reconnaissance survey executed for Enduring's proposed Well Pads, Access Roads and Pipeline Corridors for Archy Bench #11-22-11-2, #11-22-12-2, #11-22-13-2, #11-22-14-2, #11-22-24-2 (Sec. 2, T 11 S, R 22 E); Red Wash #9-24-23-30, #9-24-34-30 (Sec. 30, T 9 S, R 24 E); Red Wash #9-24-24-23 (Sec. 23, T 9 S, R 24 E); Southam Canyon #9-24-41-34 (Sec. 34, T 9 S, R 24 E); Southam Canyon #9-24-23-36, #9-24-24-36 (Sec. 36, T 9 S, R 24 E); Southam Canyon #10-25-11-6 (Sec. 6, T 10 S, R 25 E) was brief.

The localities for Southam Canyon #9-24-24-36 (Sec. 36, T 9 S, R 24 E) and #10-25-11-6 (Sec. 6, T 10 S, R 25 E) both yielded plant fossils, the latter also contained fish scales. No monitoring of these sites is recommended unless more substantial fossil material is found.

The staked areas at the remainder of the sites, namely Archy Bench #11-22-11-2, #11-22-12-2, #11-22-13-2, #11-22-14-2, #11-22-24-2 (Sec. 2, T 11 S, R 22 E); Red Wash #9-24-23-30, #9-24-34-30 (Sec. 30, T 9 S, R 24 E); Red Wash #9-24-24-23 (Sec. 23, T 9 S, R 24 E); Southam Canyon #9-24-41-34 (Sec. 34, T 9 S, R 24 E); Southam Canyon #9-24-23-36 (Sec. 36, T 9 S, R 24 E) showed no signs of fossil materials inside of the proposed construction sites. Therefore, no credible reason to limit construction within the staked areas was found.

However, if vertebrate fossil(s) are found during construction of any of the other locations covered in this report, recommendations are that a paleontologist is immediately notified in order to collect fossil materials in danger of being destroyed. Any vertebrate fossils found should be carefully moved outside of the construction areas to be checked by a permitted paleontologist.

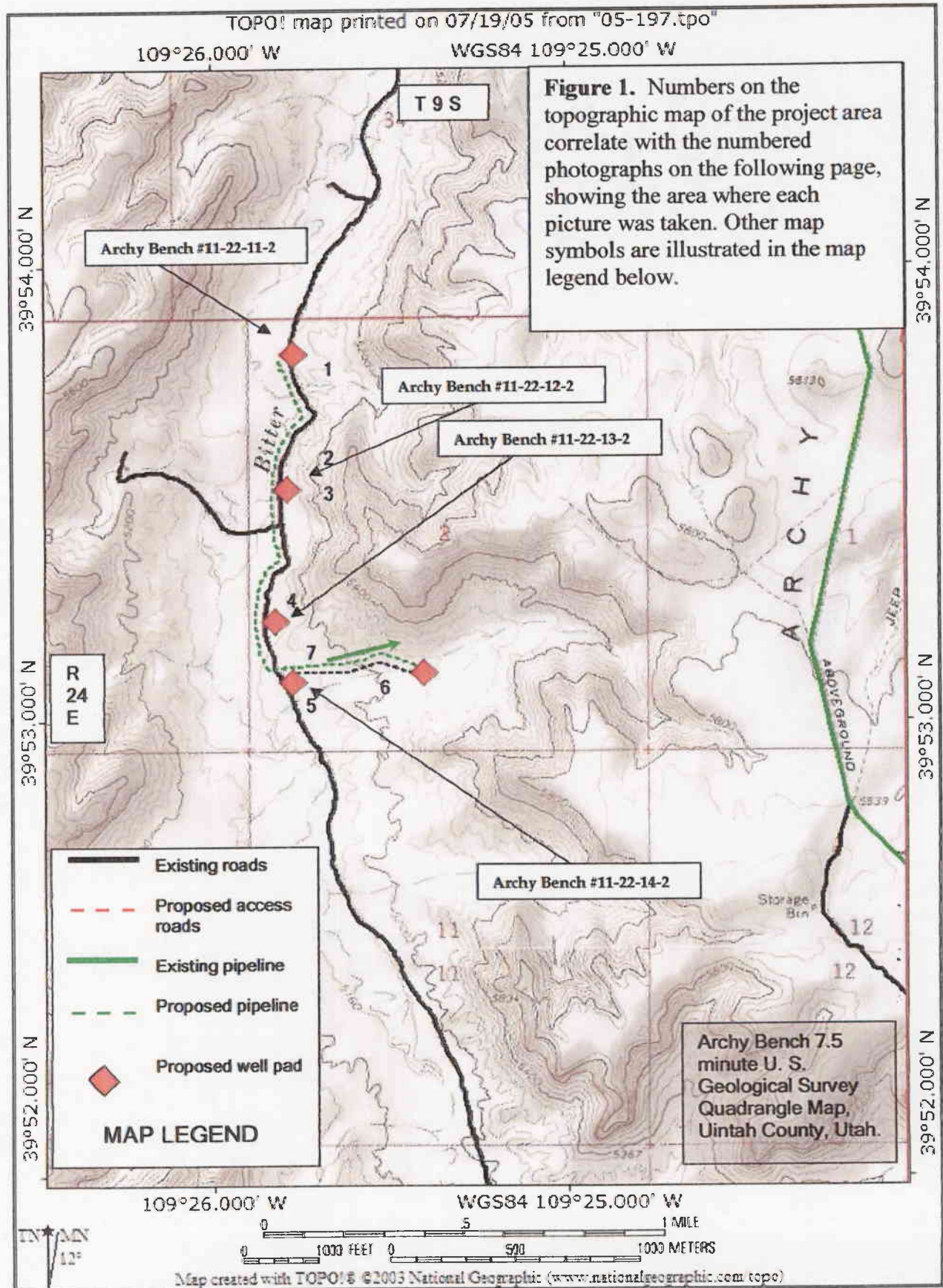
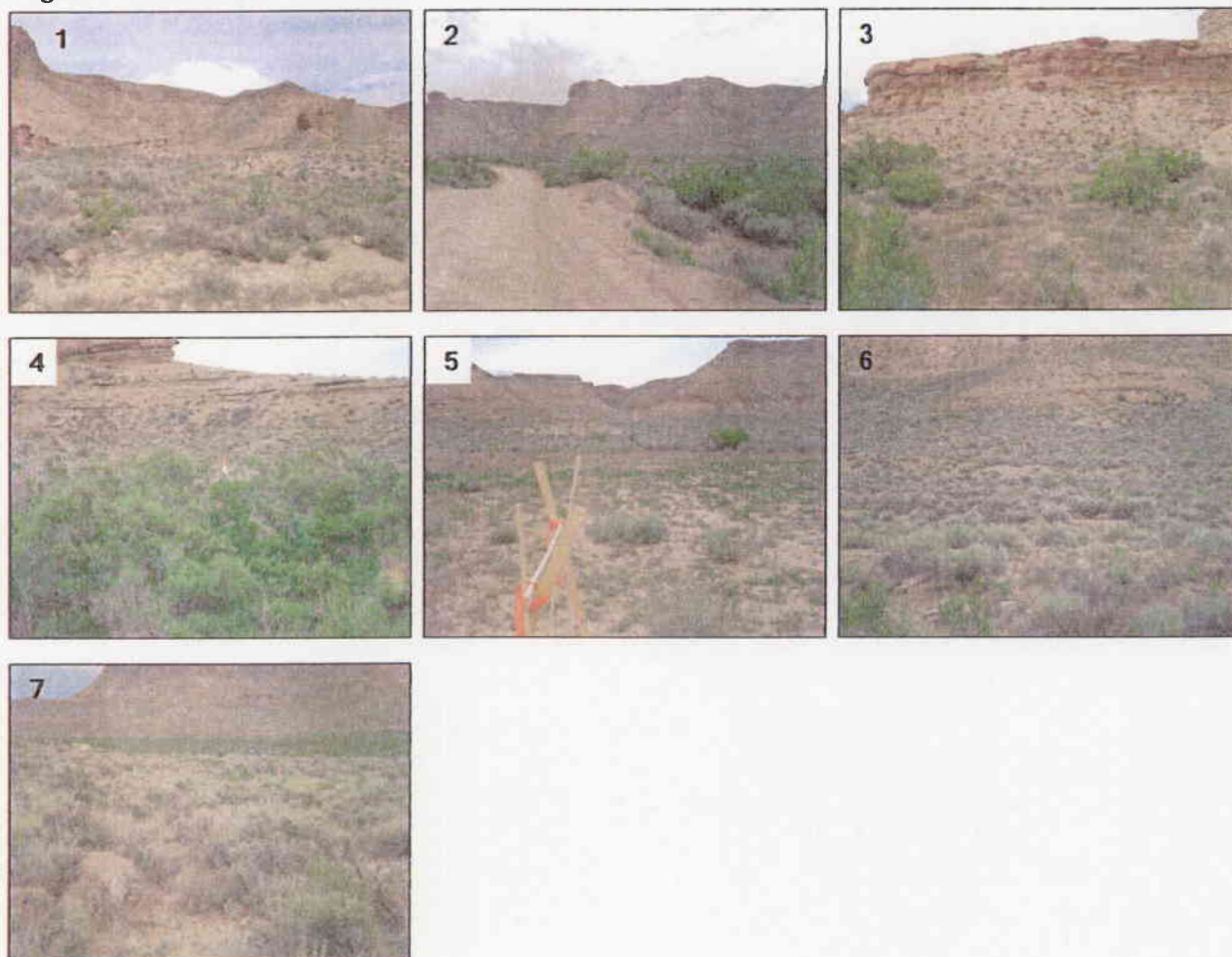


Figure 1 continued...

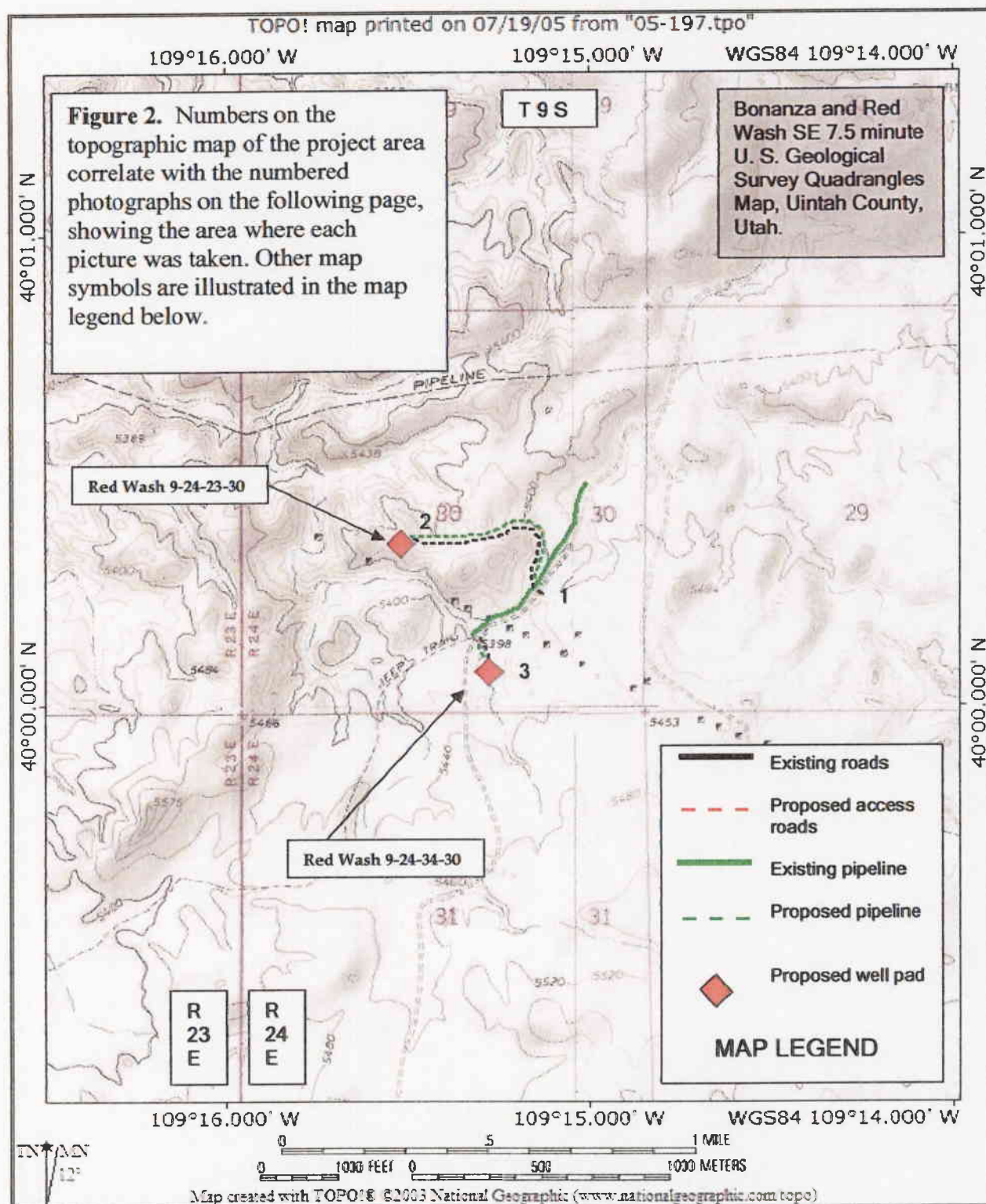
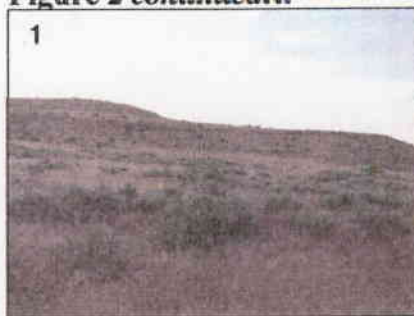


Figure 2 continued...



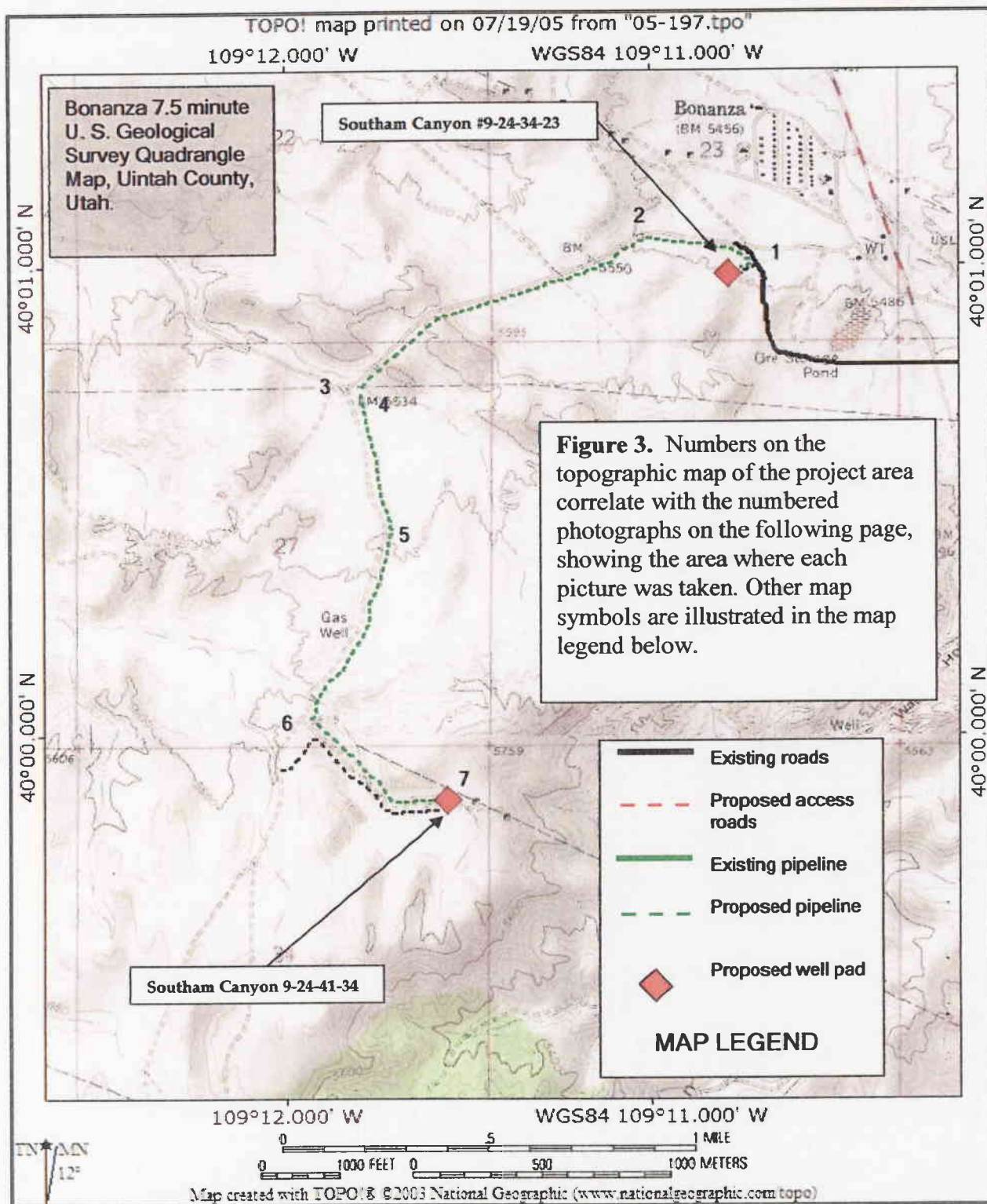


Figure 3 continued...

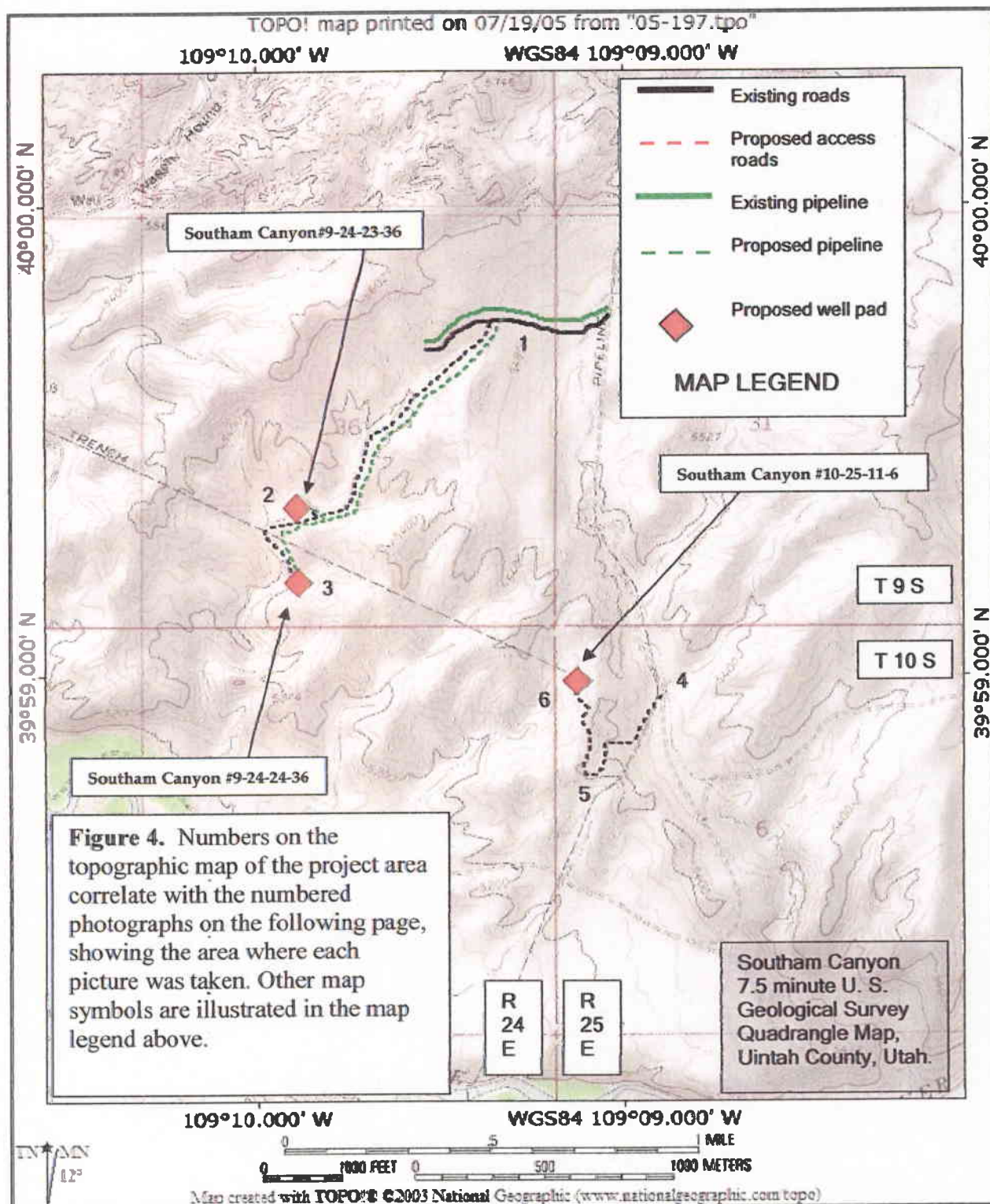
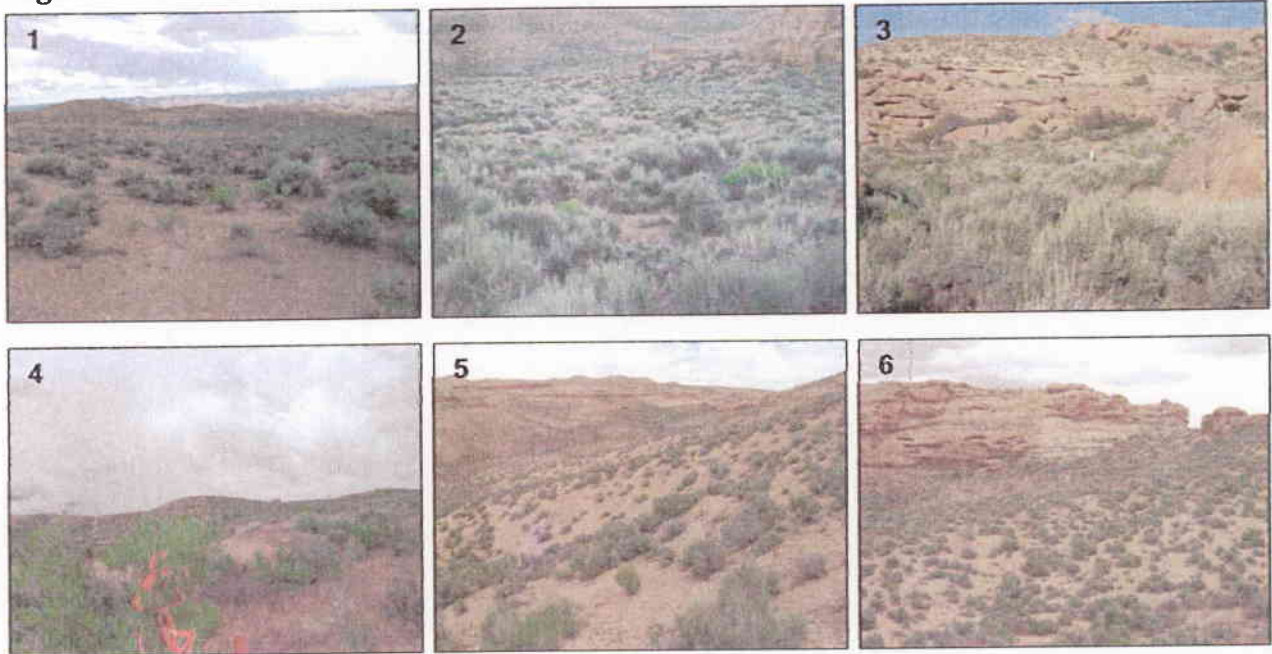


Figure 4 continued...

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STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER: _____		5. LEASE DESIGNATION AND SERIAL NUMBER: ML-47075
2. NAME OF OPERATOR: Enduring Resources, LLC		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a
3. ADDRESS OF OPERATOR: 475 17th Street, Suite 1500 CITY Denver STATE CO ZIP 80202		7. UNIT or CA AGREEMENT NAME: n/a
4. LOCATION OF WELL FOOTAGES AT SURFACE: 811' FNL - 2125' FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 2 11S 22E S		8. WELL NAME and NUMBER: Archy Bench 11-22-24-2
PHONE NUMBER: (303) 350-5114		9. API NUMBER: 4304736791
COUNTY: Uintah		10. FIELD AND POOL, OR WILDCAT: Bitter Creek
STATE: UTAH		

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: 5/23/2006	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion:	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: Request for APD Extension
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Enduring Resources, LLC respectfully request an extension to the expiration date of this Application for Permit to Drill

FROM: 7-11-2006
TO: 7-11-2007

Approved by the
Utah Division of
Oil, Gas and Mining

Date: 05-30-06
By: [Signature]

COPY SENT TO OPERATOR
Date: 7-19-06
Initials: CND

NAME (PLEASE PRINT) Alvin R. (Al) Arlian TITLE Landman - Regulatory Specialist
SIGNATURE [Signature] DATE 5/24/2006

(This space for State use only)

RECEIVED

MAY 26 2006

(See Instructions on Reverse Side)

**Application for Permit to Drill
Request for Permit Extension
Validation**

(this form should accompany the Sundry Notice requesting permit extension)

API: 4304736791
Well Name: Archy Bench 11-22-24-2
Location: 811' FSL - 2125' FWL, SESW, Sec 2, T11S-R22E
Company Permit Issued to: Enduring Resources, LLC
Date Original Permit Issued: 7/11/2005

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision.

Following is a checklist of some items related to the application, which should be verified.

If located on private land, has the ownership changed, if so, has the surface agreement been updated? Yes ☐ No ☐

Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location? Yes ☐ No ☒

Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well? Yes ☐ No ☒

Have there been any changes to the access route including ownership, or right-of-way, which could affect the proposed location? Yes ☐ No ☒

Has the approved source of water for drilling changed? Yes ☐ No ☒

Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation? Yes ☐ No ☒

Is bonding still in place, which covers this proposed well? Yes ☒ No ☐



Signature

5/24/2006

Date

Title: Landman - Regulatory Specialist

Representing: Enduring Resources, LLC

RECEIVED
MAY 26 2006
DIV. OF OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER: ML-47075
2. NAME OF OPERATOR: Enduring Resources, LLC		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
3. ADDRESS OF OPERATOR: 475 17th Street, Suite 1500 CITY Denver STATE CO ZIP 80202		7. UNIT or CA AGREEMENT NAME: N/A
PHONE NUMBER: (303) 350-5719		8. WELL NAME and NUMBER: Archy Bench 11-22-24-2
4. LOCATION OF WELL FOOTAGES AT SURFACE: 811' FSL - 2125' FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 2 11S 22E S		9. API NUMBER: 430473679
COUNTY: Uintah		10. FIELD AND POOL, OR WILDCAT: Undesignated
STATE: UTAH		

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA			
TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: <u>Well Zone Change.</u>
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Change from single zone to multi-zone

Utah State Bond #RLB0008031
Operator No. N2750

NAME (PLEASE PRINT) <u>Evette Bissett</u>	TITLE <u>Regulatory Affairs Assistant</u>
SIGNATURE <u><i>Evette Bissett</i></u>	DATE <u>1/12/2007</u>

(This space for State use only)

RECEIVED
JAN 16 2007

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

CONFIDENTIAL

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER: ML-47075
2. NAME OF OPERATOR: Enduring Resources, LLC		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: n/a
3. ADDRESS OF OPERATOR: 475 17th Street, Suite 1500 CITY Denver STATE CO ZIP 80202		7. UNIT or CA AGREEMENT NAME: n/a
PHONE NUMBER: (303) 350-5719		8. WELL NAME and NUMBER: Archy Bench 11-22-24-2
4. LOCATION OF WELL FOOTAGES AT SURFACE: 811' FSL - 2125' FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 2 11S 22E S		9. API NUMBER: 4304736791
COUNTY: Uintah		10. FIELD AND POOL, OR WILDCAT: Undesignated
STATE: UTAH		

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: Request for APD Extension
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Enduring Resources, LLC respectfully request an extension to the expiration date of this Application for Permit to Drill

FROM: 5/30/2007
TO: 5/30/2008

Approved by the
Utah Division of
Oil, Gas and Mining

Date: 06-04-07
By: [Signature]

COPY SENT TO OPERATOR
Date: 6-4-07
Initials: RM

NAME (PLEASE PRINT) Evette Bissett	TITLE Regulatory Affairs Assistant
SIGNATURE [Signature]	DATE 5/22/2007

(This space for State use only)

RECEIVED
MAY 29 2007

**Application for Permit to Drill
Request for Permit Extension
Validation**

(this form should accompany the Sundry Notice requesting permit extension)

API: 4304736791
Well Name: Archy Bench 11-22-24-2
Location: 811' FSL - 2125' FWL, SESW, Sec 2, T11S-R22E
Company Permit Issued to: Enduring Resources, LLC
Date Original Permit Issued: 7/11/2005

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision.

Following is a checklist of some items related to the application, which should be verified.

If located on private land, has the ownership changed, if so, has the surface agreement been updated? Yes ☐ No ☐

Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location? Yes ☐ No ☒


Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well? Yes ☐ No ☒

Have there been any changes to the access route including ownership, or right-of-way, which could affect the proposed location? Yes ☐ No ☒

Has the approved source of water for drilling changed? Yes ☐ No ☒

Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation? Yes ☐ No ☒

Is bonding still in place, which covers this proposed well? Yes ☒ No ☐


Signature

5/22/2007
Date

Title: Landman - Regulatory Specialist

Representing: Enduring Resources, LLC

**RECEIVED
MAY 29 2007**

DIV. OF OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

5. LEASE DESIGNATION AND SERIAL NUMBER:

ML-47075

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

n/a

7. UNIT or CA AGREEMENT NAME:

n/a

8. WELL NAME and NUMBER:

Archy Bench 11-22-24-2

9. API NUMBER:

4304736791

10. FIELD AND POOL, OR WILDCAT:

Undesignated Bitter Creek

1. TYPE OF WELL

OIL WELL ☐

GAS WELL ☒

OTHER

2. NAME OF OPERATOR:

Enduring Resources, LLC

3. ADDRESS OF OPERATOR:

475 17th Street, Suite 1500 CITY Denver

STATE CO ZIP 80202

PHONE NUMBER:

(303) 350-5719

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 811' FSL - 2125' FWL

COUNTY: Uintah

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 2 11S 22E S

STATE:

UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

TYPE OF ACTION

☒ NOTICE OF INTENT
(Submit in Duplicate)

Approximate date work will start:

6/11/2007

☐ SUBSEQUENT REPORT
(Submit Original Form Only)

Date of work completion:

☐ ACIDIZE

☐ ALTER CASING

☐ CASING REPAIR

☒ CHANGE TO PREVIOUS PLANS

☐ CHANGE TUBING

☐ CHANGE WELL NAME

☐ CHANGE WELL STATUS

☐ COMMINGLE PRODUCING FORMATIONS

☐ CONVERT WELL TYPE

☐ DEEPEN

☐ FRACTURE TREAT

☐ NEW CONSTRUCTION

☐ OPERATOR CHANGE

☐ PLUG AND ABANDON

☐ PLUG BACK

☐ PRODUCTION (START/RESUME)

☐ RECLAMATION OF WELL SITE

☐ RECOMPLETE - DIFFERENT FORMATION

☐ REPERFORATE CURRENT FORMATION

☐ SIDETRACK TO REPAIR WELL

☐ TEMPORARILY ABANDON

☐ TUBING REPAIR

☐ VENT OR FLARE

☐ WATER DISPOSAL

☐ WATER SHUT-OFF

☒ OTHER: Decrease Surface Pipe

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Request change to approved APD.

It anticipated based on off set wells and mapping that the Trona Water, if encountered, will be at 788' TVD. Therefore,

1. Request changing setting depth of 8-5/8" surface pipe from 2,000' to 1,000'.

A. Surface casing cement shall be reduced, but shall still cover from surface to 1,000',

B. Production casing cement shall be increased so that cement shall come up inside the bottom of the surface pipe at least 300'.

2. No changes from the APD shall be made as to the type cement run.

COPIES TO:
DOIG: 6-20-07
Initials: PM

RECEIVED

JUN 01 2007

DIV. OF OIL, GAS & MINING

NAME (PLEASE PRINT) Alvin R. (Al) Arlian

TITLE Landman - Regulatory Specialist

SIGNATURE

DATE 5/29/2007

(This space for State use only)

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 6/18/07
BY: [Signature]



JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

June 23, 2008

Al Arlian
Enduring Resources LLC
475 17TH Street, Suite 1500
Denver, CO 80202

Re: APD Rescinded – Archy Bench 11-22-24-2 Sec. 2, T.11S, R. 22E
Uintah County, Utah API No. 43-047-36791

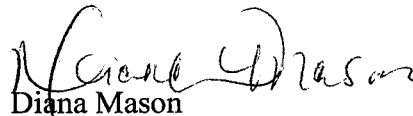
Dear Mr. Arlian:

The Application for Permit to Drill (APD) for the subject well was approved by the Division of Oil, Gas and Mining (Division) on July 11, 2005. On May 30, 2006 and on June 4, 2007, the Division granted a one-year APD extension. No drilling activity at this location has been reported to the division. Therefore, approval to drill the well is hereby rescinded, effective June 4, 2008.

A new APD must be filed with this office for approval prior to the commencement of any future work on the subject locations.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,


Diana Mason
Environmental Scientist

cc: Well File
SITLA, Ed Bonner
Bureau Of Land Management, Vernal